# INTERIOR LIGHTS AND SWITCHES

## LIGHT SWITCH, REMOVING AND INSTALLING

**CAUTION:**

- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Turn rotary knob of light switch to "0" position.

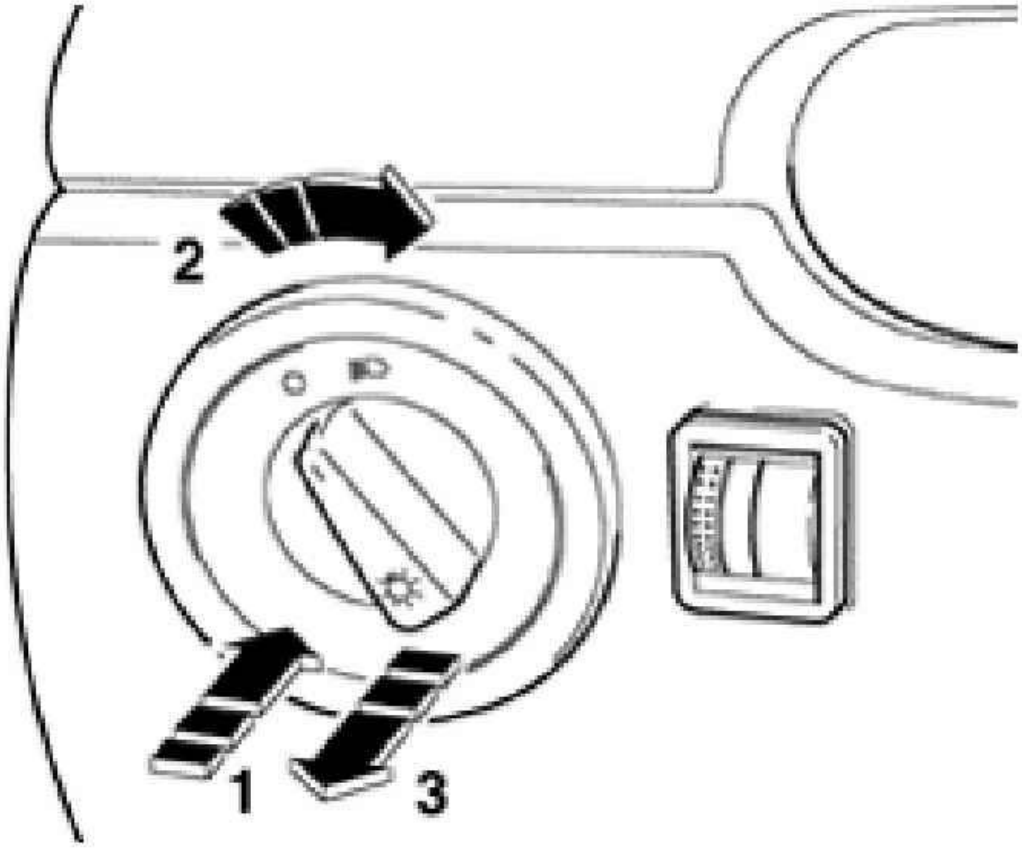


**Fig. 1: Turning Rotary Knob Of Light Switch**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press rotary knob inward (arrow -1-) and turn slightly to right (arrow -2-).
- Hold rotary knob in this position and by pulling on rotary knob remove light switch out of instrument panel (arrow -3-).
- Disconnect electrical connection.

**Installing**

- Connect electrical connection.
- Hold light switch and press rotary knob inward (arrow -1-) and turn slightly to left (arrow -2-).
- Hold rotary knob in this position and slide light switch into instrument panel.
- Turn rotary knob to "0" position, release and engage switch.

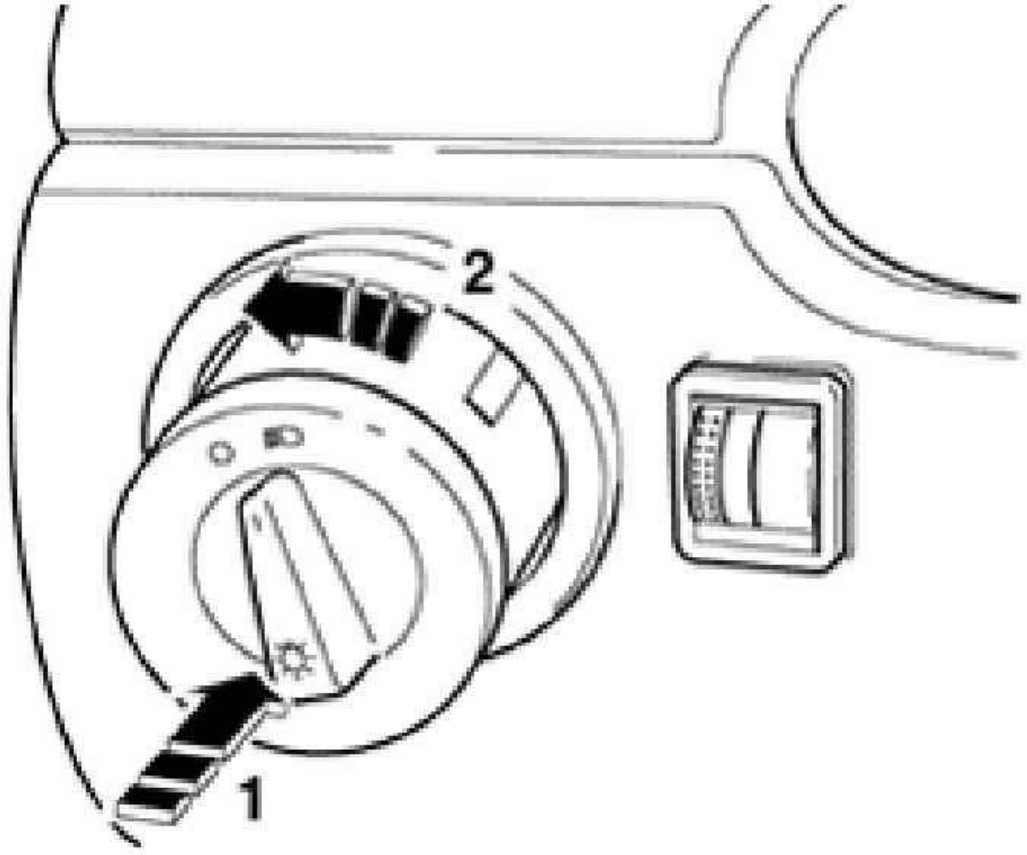


**Fig. 2: Turning Rotary Knob**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

## INSTRUMENT PANEL LIGHT DIMMER SWITCH, REMOVING AND INSTALLING

**CAUTION:**

- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Place screwdriver behind switch housing and pry switch carefully out of locking device.

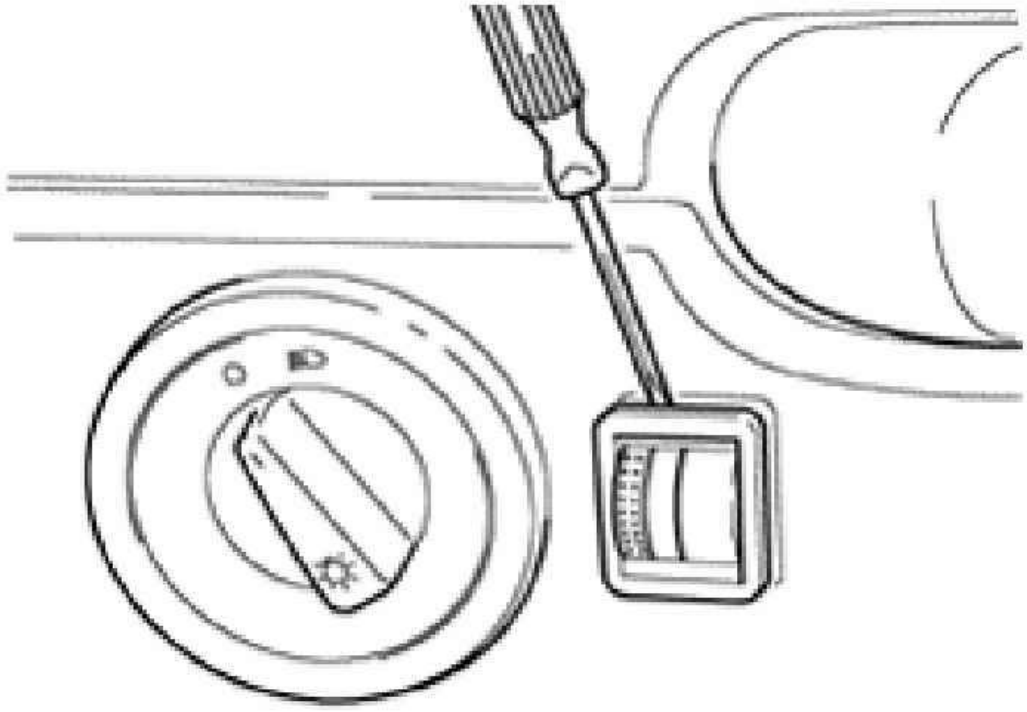


**Fig. 3: Inserting Screwdriver Behind Switch Housing**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Disconnect electrical connection.

**Installing**

- Connect electrical connection.
- Insert switch into locking device and engage.

## MIRROR ADJUSTMENT SWITCH WITH MIRROR SELECTOR SWITCH, REMOVING AND INSTALLING

**CAUTION:**

- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Remove door trim.

  See **DOOR TRIM** .

- Disconnect electrical connection.
- Pry mounting frame on long switch side -A- outward and remove switches from mounting frame.

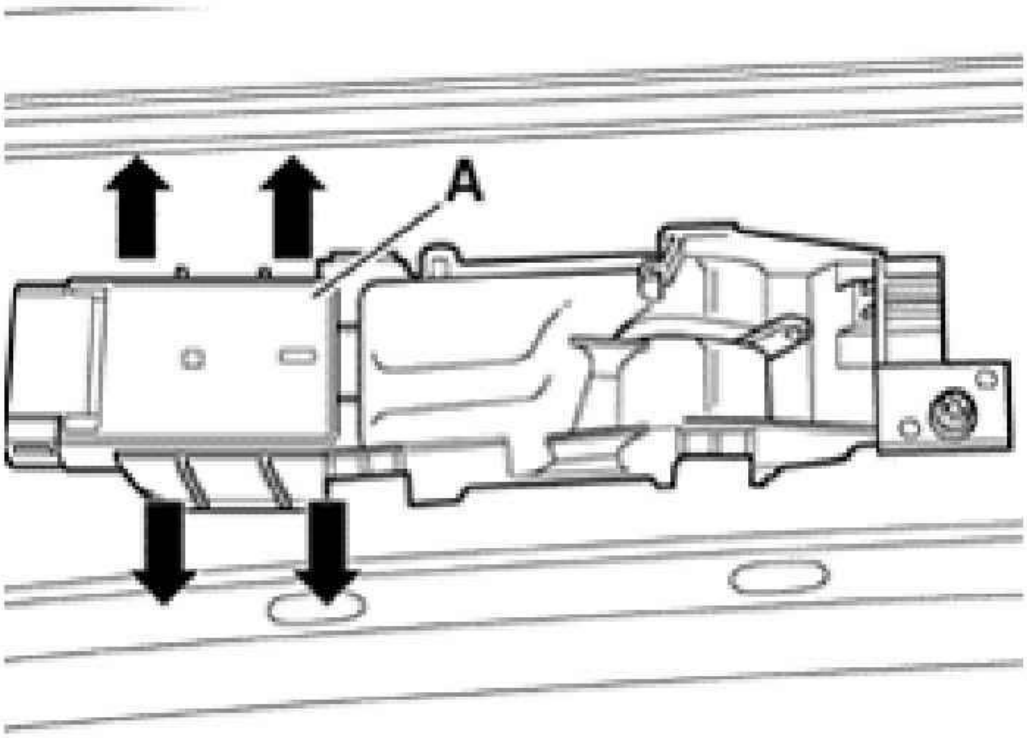


**Fig. 4: Removing Mirror Adjustment Switches From Mounting Frame**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Installing**

- Insert switch -A- in mounting frame and engage.
- Connect electrical connection.
- Install door trim.

## SWITCH FOR INTERIOR LOCK, PASSENGER SIDE, REMOVING AND INSTALLING

**CAUTION:**

- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Remove door trim.

  See **DOOR TRIM** .

- Disconnect electrical connection.
- Release switch housing -A- by pressing sideways out from locking device in mounting frame -B- and remove.

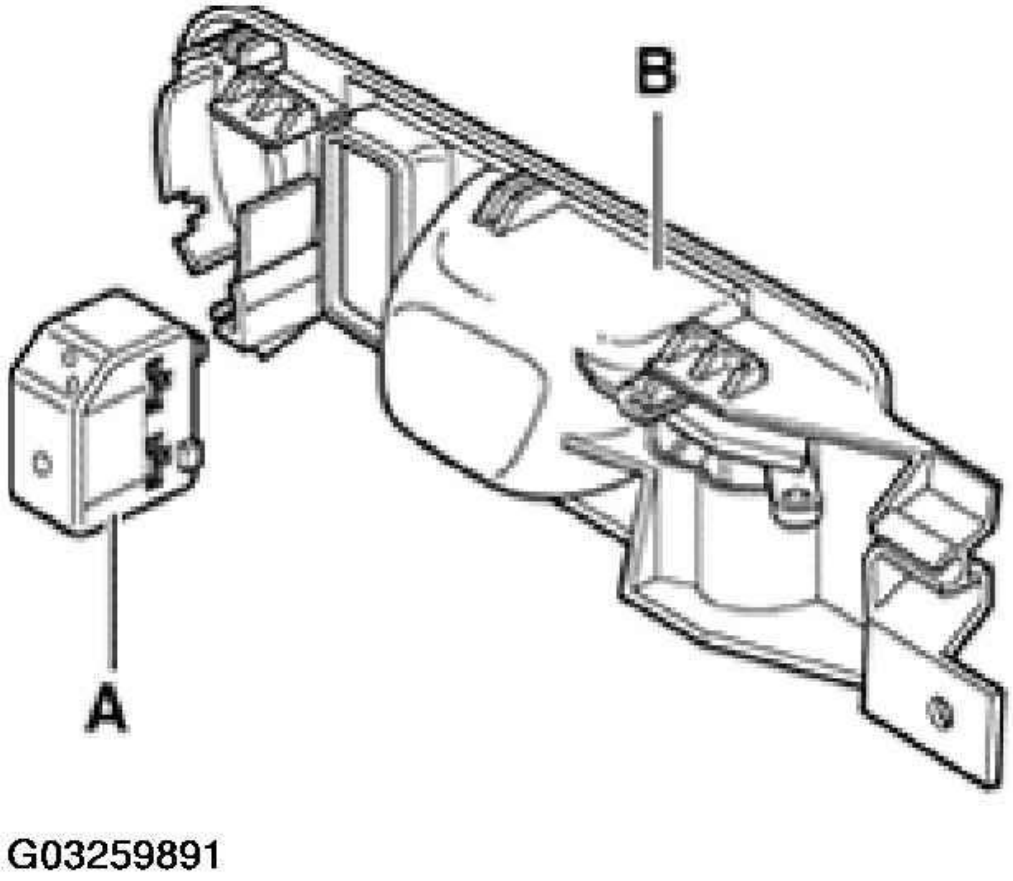


**Fig. 5: Removing Switch Housing For Interior Lock, Passenger Side**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Installing**

- Connect electrical connection.
- Insert switch -A- in recess in mounting frame -B-and engage.
- Install door trim.

## SWITCH FOR REMOTE/FUEL TANK DOOR AND SWITCH FOR REMOTE UNLOCK, REAR LID, REMOVING AND INSTALLING

**CAUTION:**

- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

The switches for remote/fuel tank door and remote unlock rear trunk lid, cannot be removed separately. The complete switch unit must be replaced.

**Removing**

- Remove door trim. See **DOOR TRIM** .
- Disconnect electrical connection.
- Release switch housing -1- by pressing sideways on locking tabs (arrows) and remove from door trim.

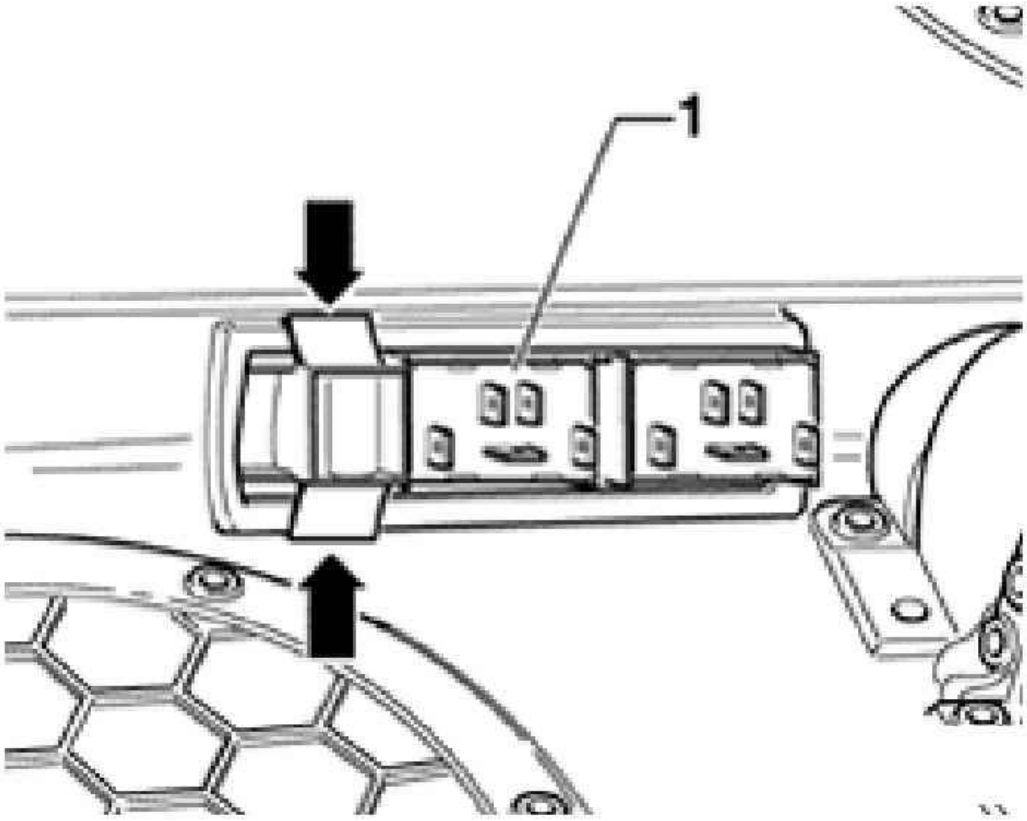


**Fig. 6: Removing Switch Housing**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Installing**

- Insert switch -1- into door trim and engage.
- Connect electrical connection.
- Install door trim.

## SWITCHES IN CENTER OF INSTRUMENT PANEL, REMOVING AND INSTALLING

Removing and installing is the same procedure for all switches. Procedure for hazard warning light switch -E3- is described here.

Switch must be pulled out in order to disconnect electrical connector.

**Special tools and equipment**

Wood or plastic wedge

**Removing**

**CAUTION:**

- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

- Protect instrument panel and adjacent switches with adhesive tape if necessary.
- Press in adjacent switch and carefully pry out switch using flat plastic wedge or screwdriver.

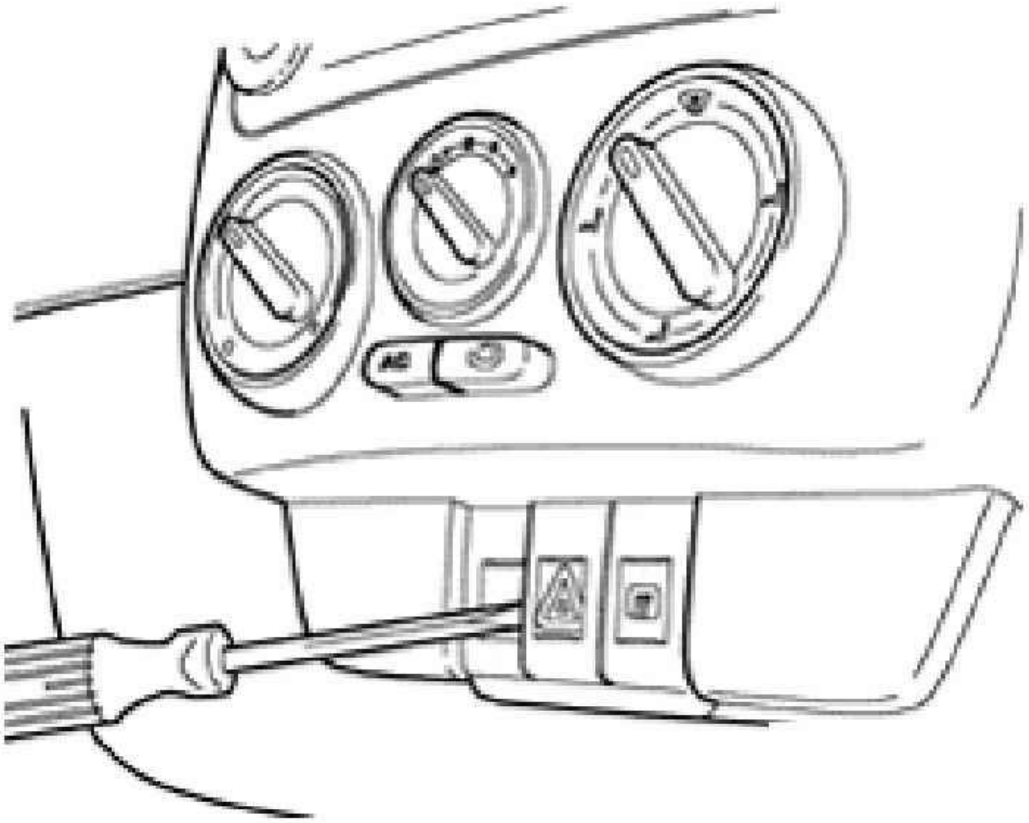

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**Fig. 7: Press Adjacent Instrument Panel Switch**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Release connections and disconnect electrical connection.

**Installing**

- Connect electrical connection.
- Insert switch into mounting and engage properly.

## LUGGAGE COMPARTMENT LIGHT SWITCH, REMOVING AND INSTALLING

The luggage compartment light switch is integrated into the trunk lock and cannot be replaced separately.

If the luggage compartment light switch is faulty, the complete trunk lock must be replaced.

See **TAILGATE/TRUNK LID LOCK, REMOVING AND INSTALLING** , or **TAILGATE/TRUNK LID LOCK (MODELS FROM 09.01 AND UP, USA), REMOVING AND INSTALLING** , or **TRUNK LID LOCK (CONVERTIBLE), REMOVING AND INSTALLING** .

## DOOR CONTACT SWITCH, REMOVING AND INSTALLING

The door contact switch is integrated into the door lock and cannot be replaced individually.

The complete door lock must be replaced if the door contact switch is faulty.

See **FRONT DOOR** .

## INTERIOR LIGHT, REMOVING AND INSTALLING

**CAUTION:**

- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Carefully pry lens out from interior mirror and remove.

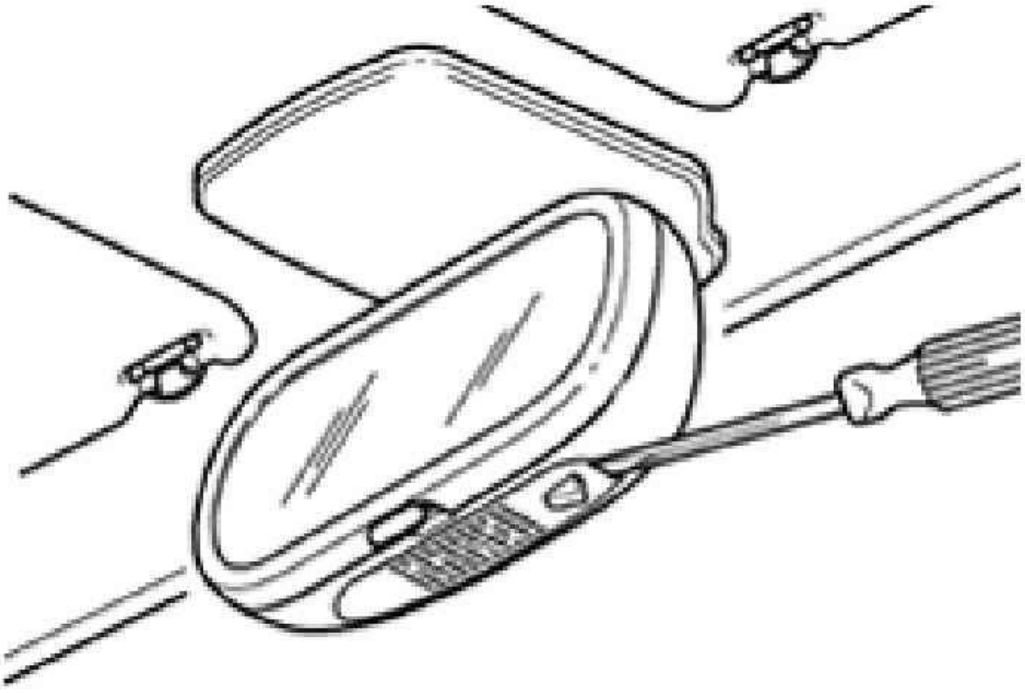



**Fig. 8: Removing Lens From Interior Mirror**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Release connections and disconnect electrical connection.
- Replace 12V/3W bulb.

**Installing**

- Connect electrical connection to interior light.
- Insert lens and engage properly.

## GLOVE COMPARTMENT LIGHT, REMOVING AND INSTALLING

**CAUTION:**
- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Insert screwdriver behind lens and carefully pry lens out.

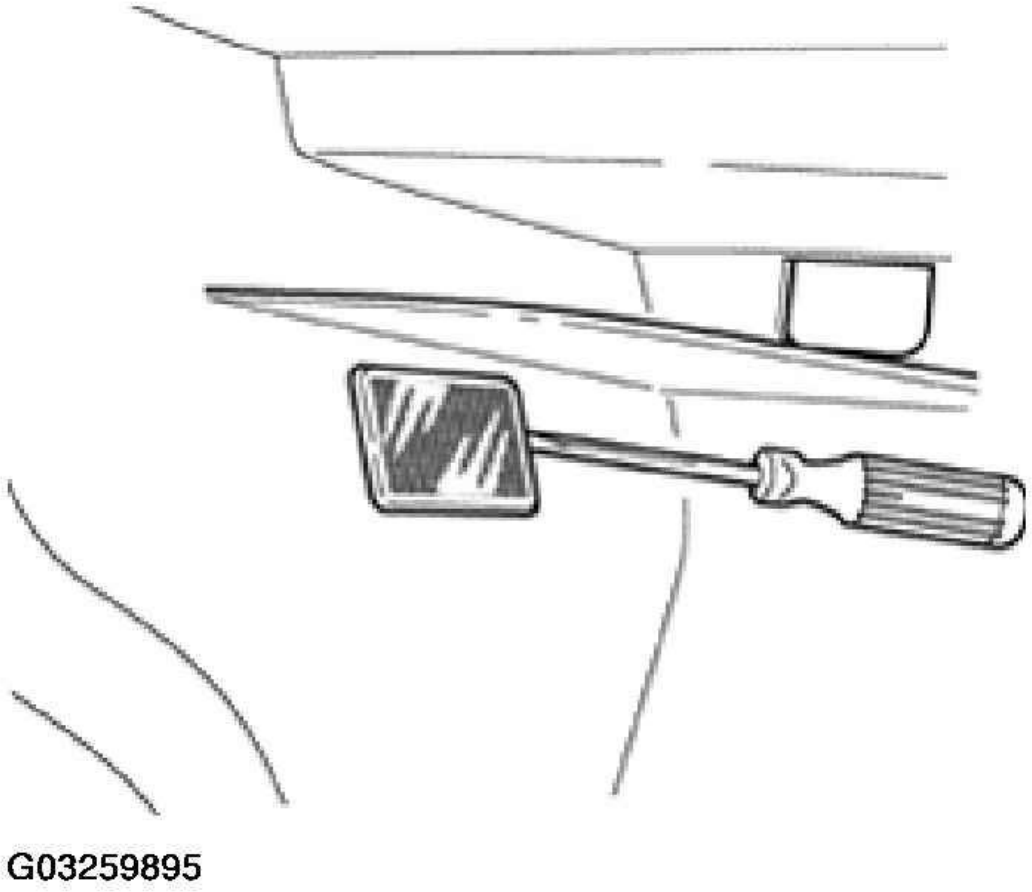



**Fig. 9: Inserting Screwdriver Behind Glove Compartment Light Lens**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove lens with bulb holder.
- Disconnect electrical connection.
- Replace 12V/3W bulb.

**Installing**

- Connect electrical connection.
- Insert lens with bulb holder into glove compartment and engage properly.

After working on the glove compartment light, a functional check of the switch must be carried out.

With glove compartment closed, the light must not come on.

**MAKE-UP MIRROR LIGHT, REMOVING AND INSTALLING**

**NOTE: The procedures for removing left make-up-mirror light -W20- and right make-up mirror light -W14- are identical.**

**CAUTION:**
- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Insert screwdriver behind lens and carefully pry lens out.

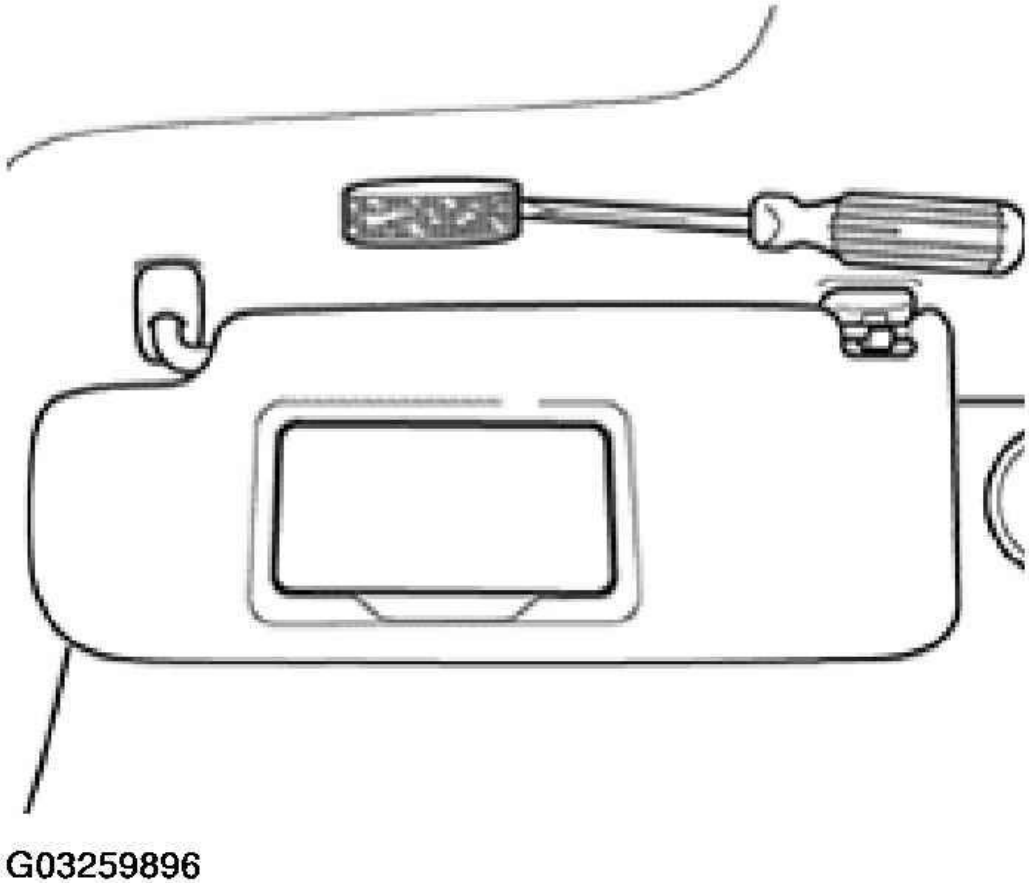



**Fig. 10: Inserting Screwdriver Behind Make-Up Mirror Light Lens**

**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove lens with bulb holder.
- Disconnect electrical connection.
- Replace 12V/3W bulb.

**Installing**

- Connect electrical connection.
- Insert lens with bulb holder into headliner and engage properly.

## LUGGAGE COMPARTMENT LIGHT, REMOVING AND INSTALLING

**CAUTION:**

- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Insert screwdriver behind lens and carefully pry lens out.

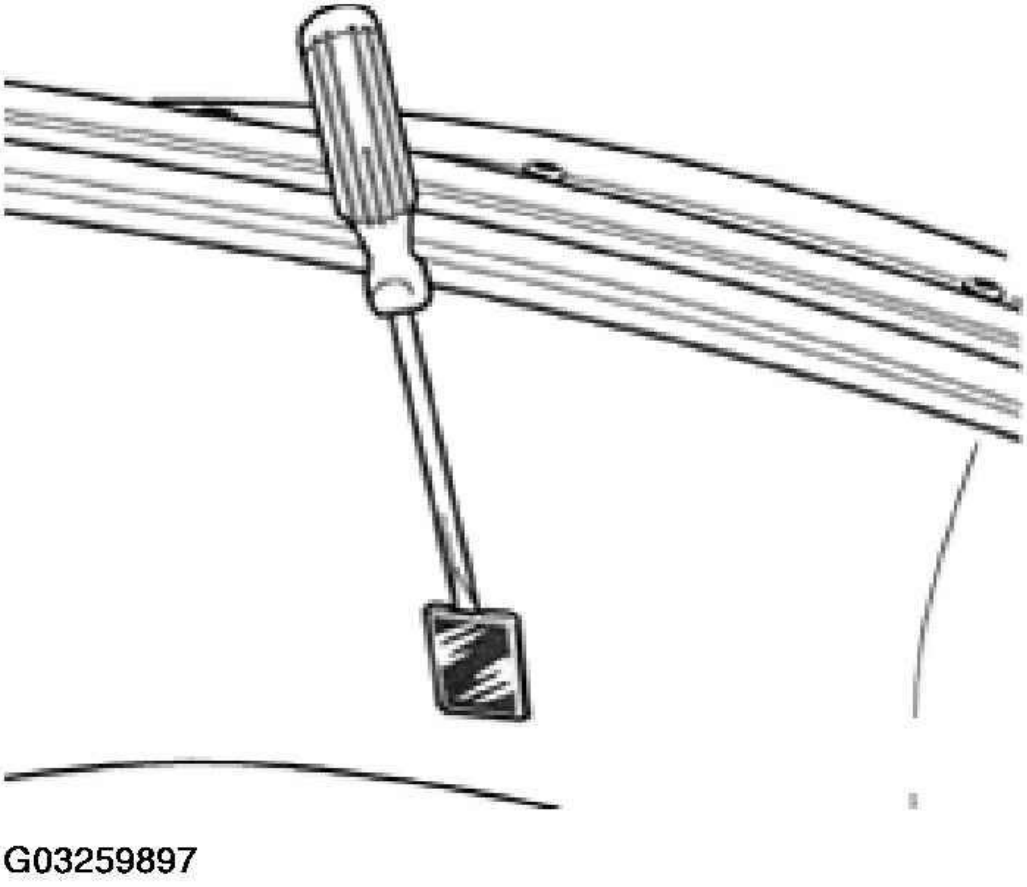



**Fig. 11: Inserting Screwdriver Behind Luggage Compartment Light Lens**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove lens with bulb holder.
- Disconnect electrical connection.
- Replace 12V/3W bulb.

**Installing**

- Connect electrical connection.
- Insert lens with bulb holder into mounting and engage properly.

After working on the luggage compartment light a functional check of the switch must be carried out.

With trunk lid closed, the light must not come on.

# ANTI-THEFT IMMOBILIZER

## GENERAL INFORMATION

New Beetle models from m.y. 2000 are equipped with an anti-theft immobilizer system.

Immobilizer functions supported by:

- control electronics ("control module") integrated with instrument cluster
- a warning light for anti-theft immobilizer -K117- in instrument cluster (speedometer display)
- an adapted Engine Control Module (ECM)
- an induction coil on the ignition lock
- Adapted ignition keys with electronic components (transponder and response reader memory)

**Malfunction recognition and Diagnostic Trouble Code (DTC) display via warning light for anti-theft immobilizer -K117-**

An intact immobilizer system is indicated by the warning light for anti-theft immobilizer -K117- lighting up and going out after approx. 3 seconds when the ignition is switched on.

When the ignition is switched "on", the warning lamp flashes or lights up continuously to indicate a malfunction in the system when:

- Adapting the ignition key has been carried out incorrectly.
- No transponder (response reader memory) is present in ignition key.
- An unauthorized ignition key is used.
- An unauthorized engine control module is detected.
- A malfunction in the induction coil of anti-theft immobilizer -D2-.
- A malfunction in the data wiring is present.

**The warning light for anti-theft immobilizer -K117- does not light up after switching on ignition**

- The immobilizer control module has detected an authorized key.
- The immobilizer control module has not detected an incorrect engine control module.
- The immobilizer control module is currently "adapting keys" and after adapting the keys no malfunction has occurred.
- To troubleshoot, perform On Board Diagnostic (OBD) program and retrieve stored information with VAS 5051 Vehicle Diagnostic, Testing and Information System in mode "Guided Fault Finding".

## ANTI-THEFT IMMOBILIZER ON BOARD DIAGNOSTIC (OBD)

If malfunctions occur in sensors and components being monitored, they will be stored in the Diagnostic Trouble Code (DTC) memory together with an indication of the type of malfunction.

A maximum of 4 DTCs can be stored simultaneously.

Sporadic malfunctions are automatically cancelled if they are not repeated in next 50 engine starts.

On Board Diagnostic of the anti-theft immobilizer system is to be carried out using the VAS 5051 Vehicle Diagnostic Testing and Information System or VAS 5052 Vehicle Diagnostic and Service System in mode "Guided Fault Finding".

## ANTI-THEFT IMMOBILIZER CONTROL MODULE, REPLACING

Replacement of instrument cluster with integrated immobilizer control module functions requires replacement unit to be adapted to the vehicle's Engine Control Module (ECM). The following OBD program steps initiate this procedure.

#### Special tools, testers and auxiliary items needed

- VAS 5051 Vehicle Diagnostic Testing and Information System or VAS 5052 Vehicle Diagnostic and Service System.
- Adapter cable VAS 5051/1 or VAS 5051/3
- Appropriate VAS 5052 adapter cable

#### VAS 5051/5052, connecting

- Switch off all electrical consumers.
- Engage parking brake.
- Automatic transmission: Selector lever in "N" or "P" position.
- Manual transmission: Selector lever in "Neutral"position.

**Fig. 12: Identifying VAS 5051 Vehicle Diagnostic Testing And Information System**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- With ignition switched off, connect VAS 5051/5052 with adapter cable to Data Link Connector (DLC) located under the instrument panel, left.

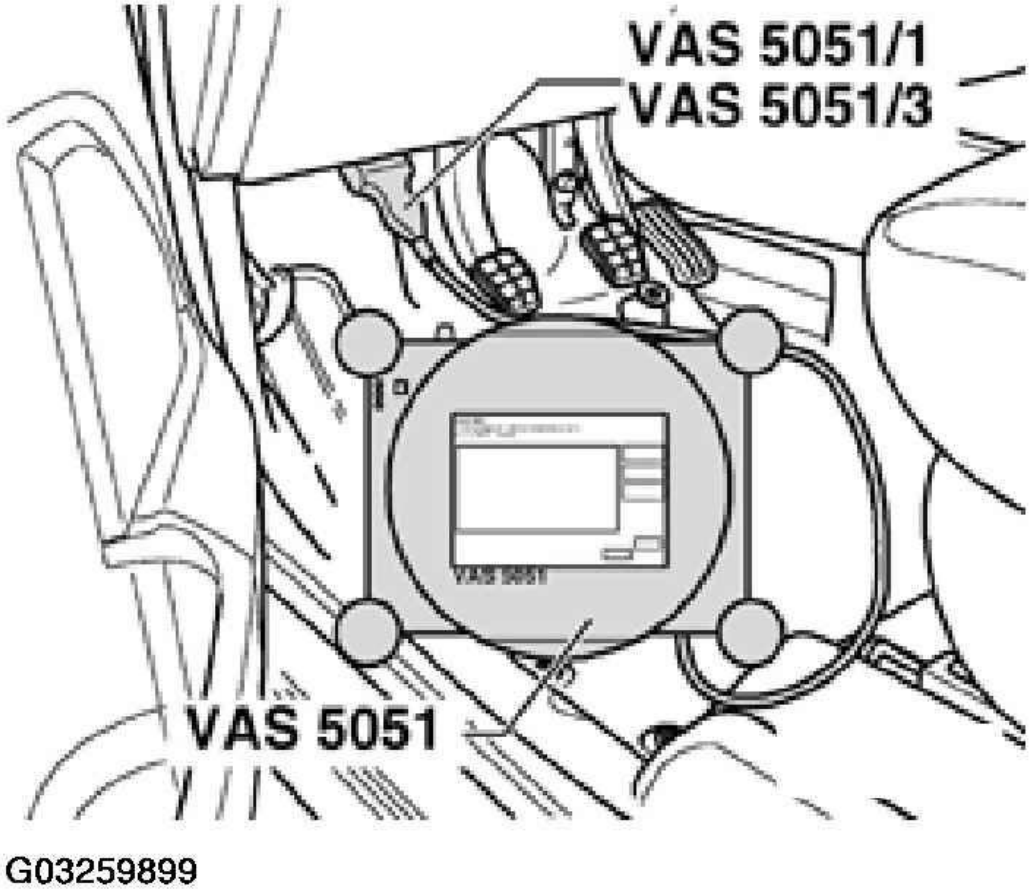



**Fig. 13: Connecting VAS 5051/5052 With Adapter Cable To Data Link Connector**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Switch on ignition
- Select mode "Guided Fault Finding"
- Enter appropriate model, equipment and model year information and press ">" to confirm.

After all Control Modules have been registered and DTC memories checked,

- Select "Go to"
- Select "Function / Component Selection"
- Select "Body (Repair Group 01; 27; 50 to 97)"
- Select "Electrical System (Repair Group 27; 90 to 97)"
- Select "01 -Systems capable of self-diagnosis"

- Select "Anti-theft immobilizer" where indicated
- Select "Functions"
- Select "Adapt instrument cluster to Engine Control Module (ECM).
- Forward with button
- Follow/perform selected OBD program steps as prompted by tester.

**ANTI-THEFT IMMOBILIZER CONTROL MODULE, REMOVING AND INSTALLING**

Anti-theft immobilizer control module functions are integrated with the instrument cluster. In the event of faulty anti-theft immobilizer control module functions, the entire instrument cluster requires replacement. See **INSTRUMENT CLUSTER, REMOVING AND INSTALLING** .

**INDUCTION COIL OF ANTI-THEFT IMMOBILIZER -D2-, REMOVING AND INSTALLING**

The induction coil of anti-theft immobilizer -D2- is integrated with the steering column lock cylinder housing and cannot be replaced separately. In the event of immobilizer induction coil malfunction, the complete lock cylinder housing requires replacement. See **STEERING LOCK HOUSING, REMOVING AND INSTALLING** .

**TRANSPONDER (KEY)**

Replacement or servicing of the transponder integrated with the vehicle keys is not possible. In the event of transponder malfunction, the complete key assembly requires replacement in conjunction with OBD program, See VAS 5051 Vehicle Diagnostic Testing and Information System or VAS 5052 Vehicle Diagnostic and Service System in mode "Guided Fault Finding".

# HEADLIGHTS

## HEADLIGHTS, ASSEMBLY

**CAUTION: Before beginning repairs on the electrical system:**

- **Obtain the anti-theft radio security code.**
- **Switch off all electrical consumers.**
- **Switch off ignition and remove ignition key.**
- **Disconnect negative (-) battery terminal.**
- **When disconnecting and reconnecting battery terminals, observe all applicable Notes and torque specifications, as well as instructions on performing OBD program and electrical system function checks as specified. See BATTERY, DISCONNECTING AND RECONNECTING .**

**NOTE: After performing any repairs or service that could affect headlight aim, check/adjust aim, See HEADLIGHTS, ADJUSTING .**

**NOTE: The following list refers to items in Fig. 1 .**

1. **Gasket**
   - Replace if damaged
2. **Cover**

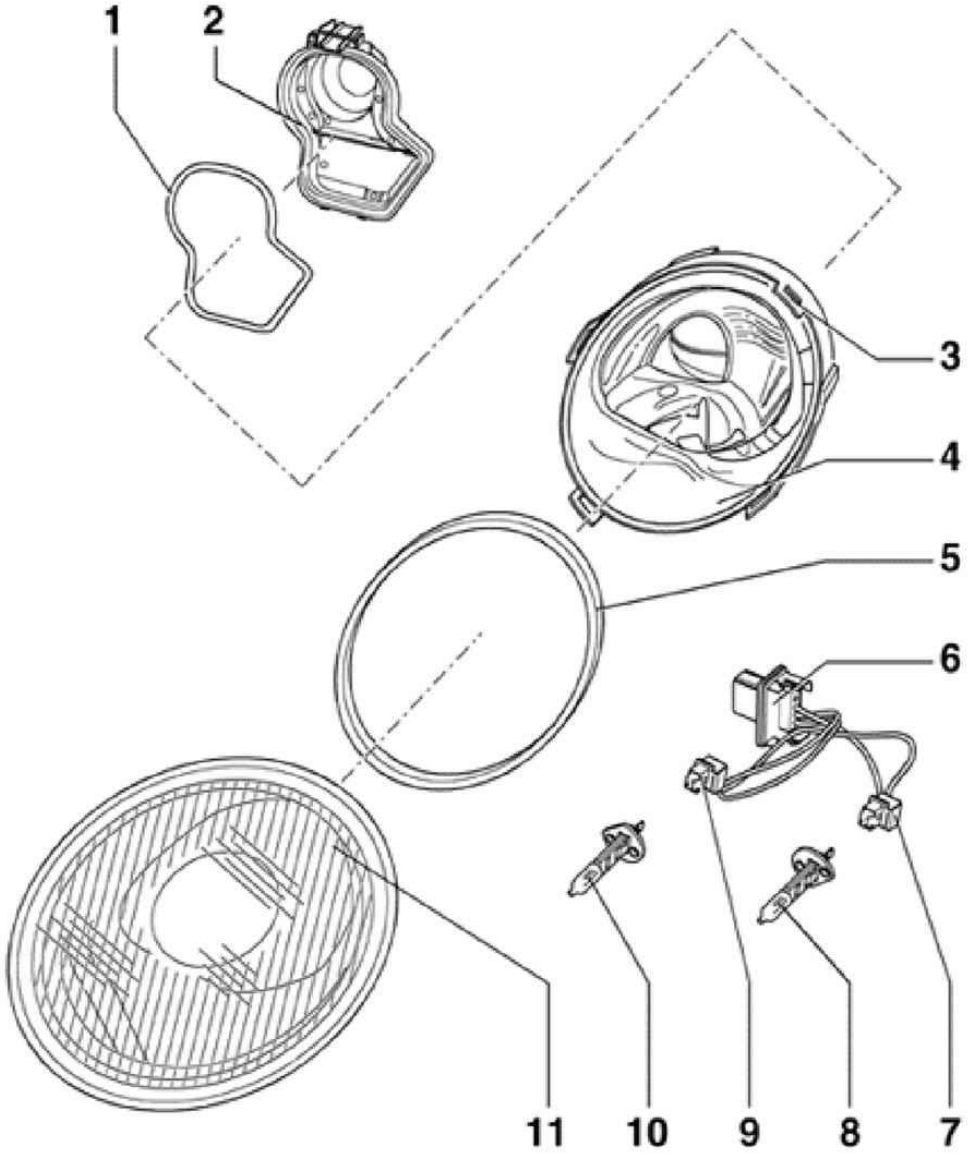
   Removing

   - through 08.98, See **HEADLIGHTS THROUGH 08.98, REMOVING AND INSTALLING**
   - from 09.98, See **HEADLIGHTS FROM 09.98, REMOVING AND INSTALLING**
3. **Retainers**
   - Qty. 4
4. **Headlight housing**

   Removing and installing

   - through 08.98, See **HEADLIGHTS THROUGH 08.98, REMOVING AND INSTALLING**
   - from 09.98, See **HEADLIGHTS FROM 09.98, REMOVING AND INSTALLING**
5. **Gasket**
   - Replace if damaged

6. **Harness connector**
    - Clipped into headlight housing
7. **Electrical connector for high beam bulb**
8. **High beam bulb**
    - H1 12 V, 55 Watt
    - Replacing, See **HIGH BEAM BULB, REMOVING**
9. **Electrical connector for low beam bulb**
10. **Low beam bulb**
    - H1 12 V, 55 Watt
    - Replacing, See **HEADLIGHT BULBS, REPLACING**
11. **Headlight glass**
    - Replace if gasket is faulty
    - Removing: unclip retainers Pos. 3




1 - Gasket

2 - Cover

3 - Retainers

4 - Headlight housing

5 - Gasket

6 - Harness connector

7 - Electrical connector for high beam bulb

8 - High beam bulb

9 - Electrical connector for low beam bulb

10 - Low beam bulb

11 - Headlight glass

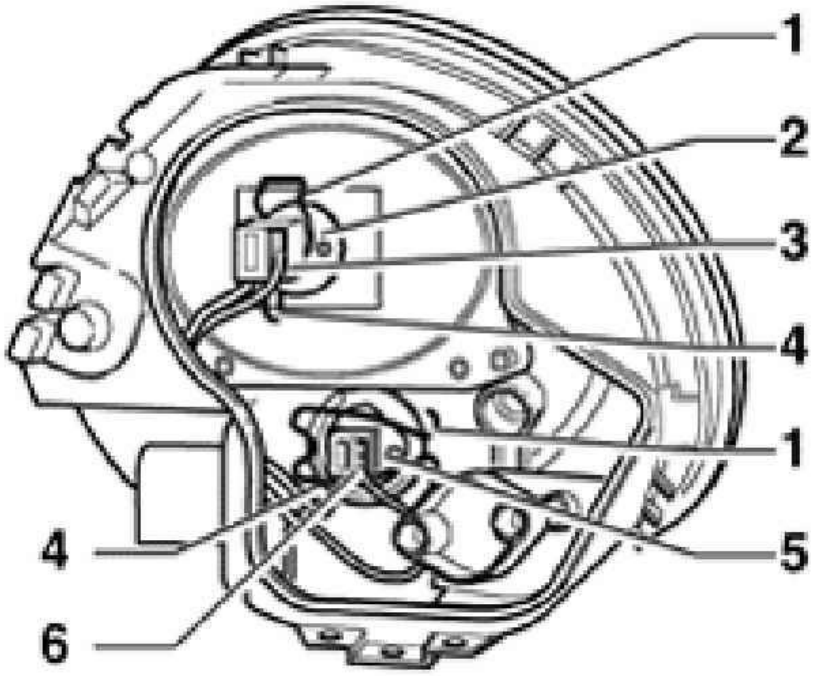
**Fig. 1: Identifying Headlights Assembly Components**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

## HEADLIGHT BULBS, REPLACING

**Headlight bulbs, assembly**

**NOTE: The following list refers to items in Fig. 2 .**

1. Retaining clip
2. High beam bulb
3. Electrical connector for high beam
4. Locating lugs
5. Low beam bulb
6. Electrical connector for low beam




1 - Retaining clip

2 - High beam bulb

3 - Electrical connector for high beam

4 - Locating lugs

5 - Low beam bulb

6 - Electrical connector for low beam

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**Fig. 2: Identifying Headlight Bulbs**

**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Low beam bulb, removing**

- Remove applicable front headlight.

  See **HEADLIGHTS THROUGH 08.98, REMOVING AND INSTALLING** or **HEADLIGHTS FROM 09.98, REMOVING AND INSTALLING** .

- Remove cover on rear of headlight insert.
- Disconnect electrical connector -6- from low beam bulb.
- Push spring retaining clip -1- over lugs -4- and move to side.
- Pull low beam bulb -5- out from reflector.

**Low beam bulb, installing**

**CAUTION: Do not touch the glass portion of the bulb with bare hands. The moisture and/or grease from fingers that evaporates on the bulb during operation, can cause the glass to cloud over.**

- Insert new bulb so lugs on laminated plate align with grooves in reflector.
- After installing new low beam bulb check headlight aim.

**High beam bulb, removing**

- Remove applicable front headlight.

  See **HEADLIGHTS THROUGH 08.98, REMOVING AND INSTALLING** or **HEADLIGHTS FROM 09.98, REMOVING AND INSTALLING** .

- Remove cover on rear of headlight insert.
- Disconnect electrical connector -3- from high beam bulb.
- Push spring retaining clip -1- over the lugs -4- and move to side.
- Pull high beam bulb -2- out from reflector.

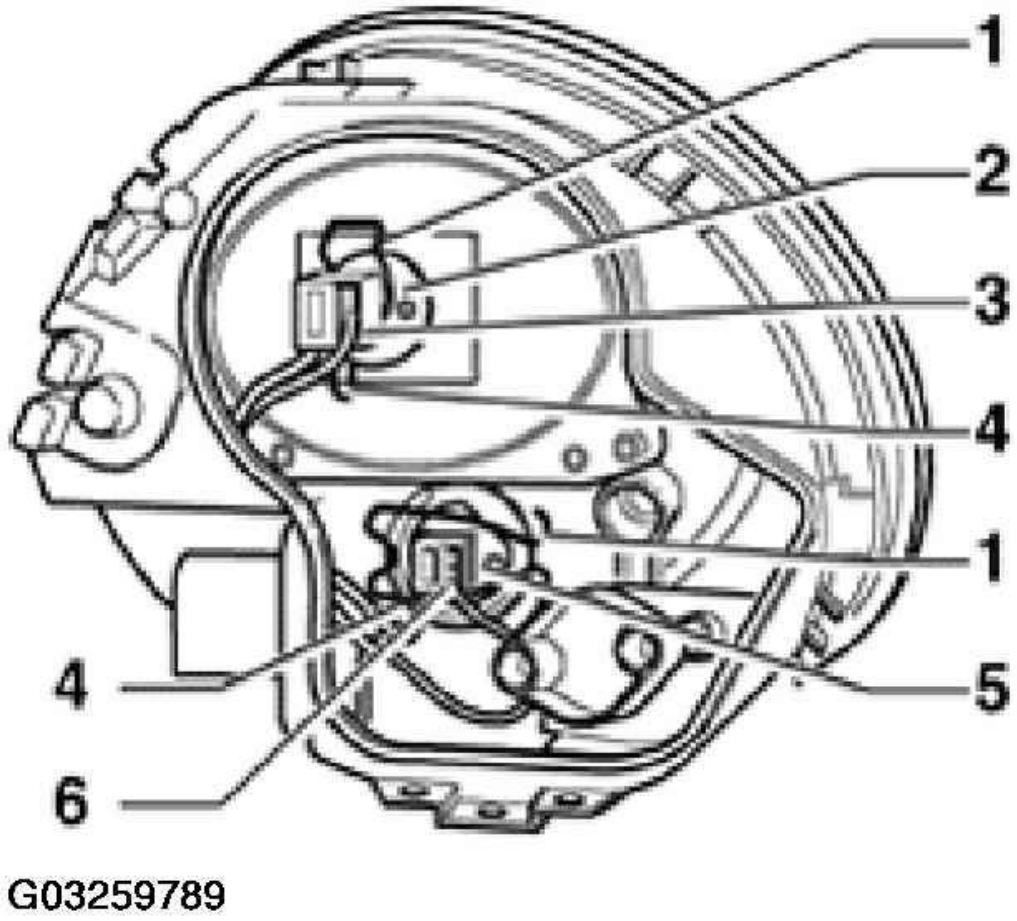


**Fig. 3: Identifying Headlight Bulbs**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**High beam bulb, installing**

**CAUTION: Do not touch the glass portion of the bulb with bare hands. The moisture and/or grease from fingers that evaporates on the bulb during operation, can cause the glass to cloud over.**

- Insert new bulb so lugs on laminated plate align with grooves in reflector.
- After installing new high beam bulb check headlight aim.

**HEADLIGHTS THROUGH 08.98, REMOVING AND INSTALLING**

**Left headlight, removing**

- Disconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Open clamp -1-.
- Press release button -2- and push up lever -3-.
- Pull headlight housing -4- slightly forward.
- Disconnect electrical connectors from headlight.
- Remove headlight housing -4-.

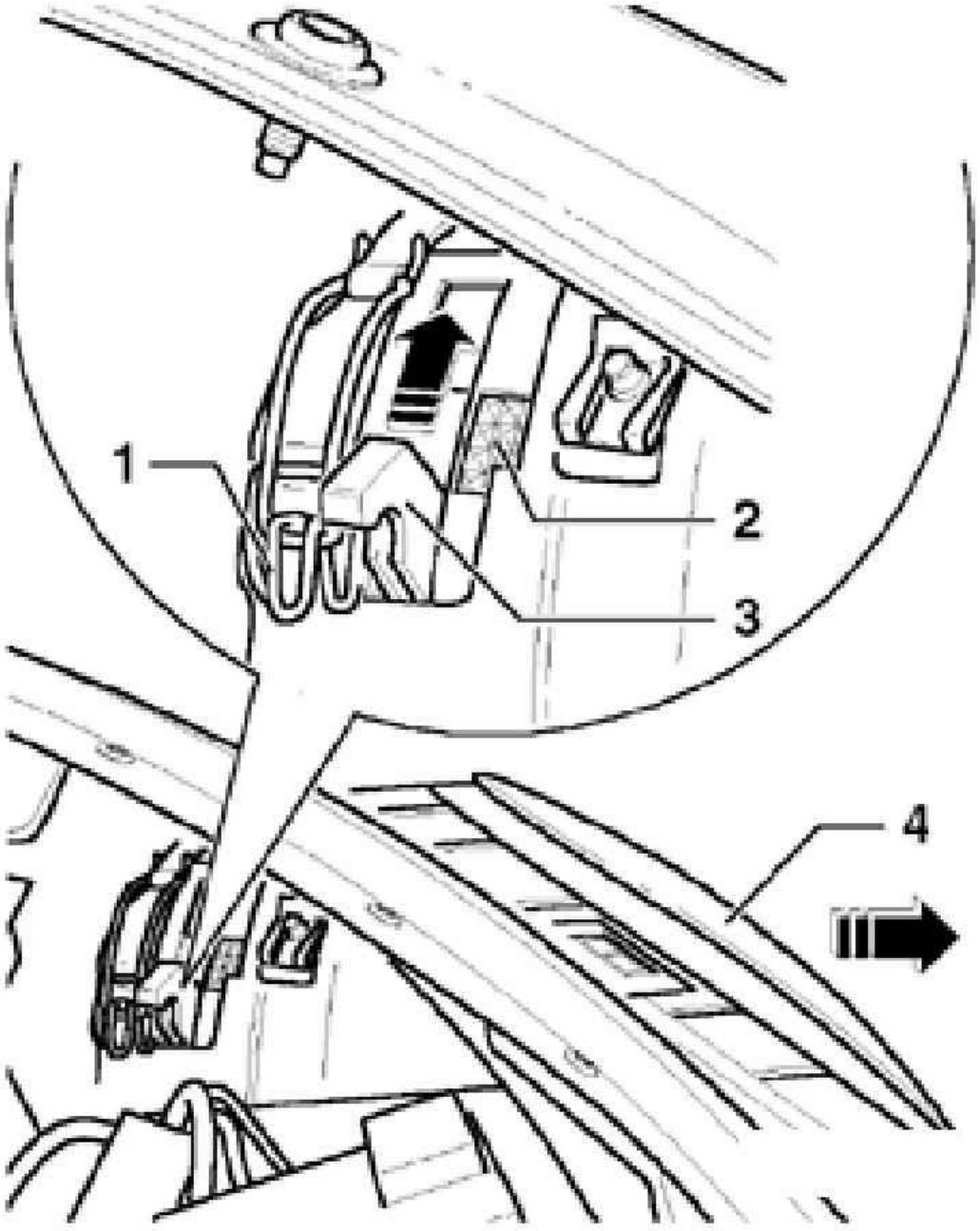


**Fig. 4: Removing Button And Push Up Lever**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Left headlight, installing**

- Connect electrical connectors -1- to headlight.
- Insert headlight into guide tracks (arrows) and push inward.

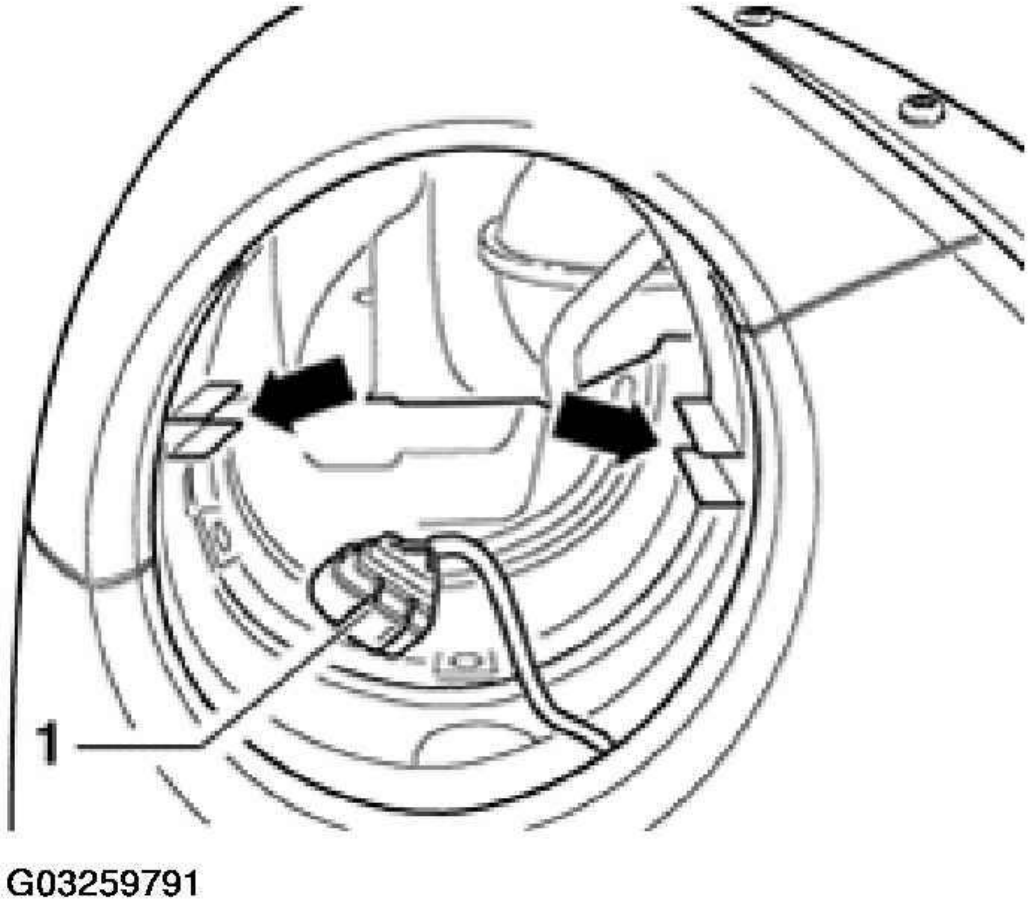


**Fig. 5: Inserting Headlight Into Guide Tracks**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Push down on lever in engine compartment to lock headlight.
- Reconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Check headlight aim.

  See **HEADLIGHT ADJUSTMENT, CHECKING** .

**Right headlight, removing**

- Disconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Open clamp -1-.
- Press release button -2- and push up lever -3-.

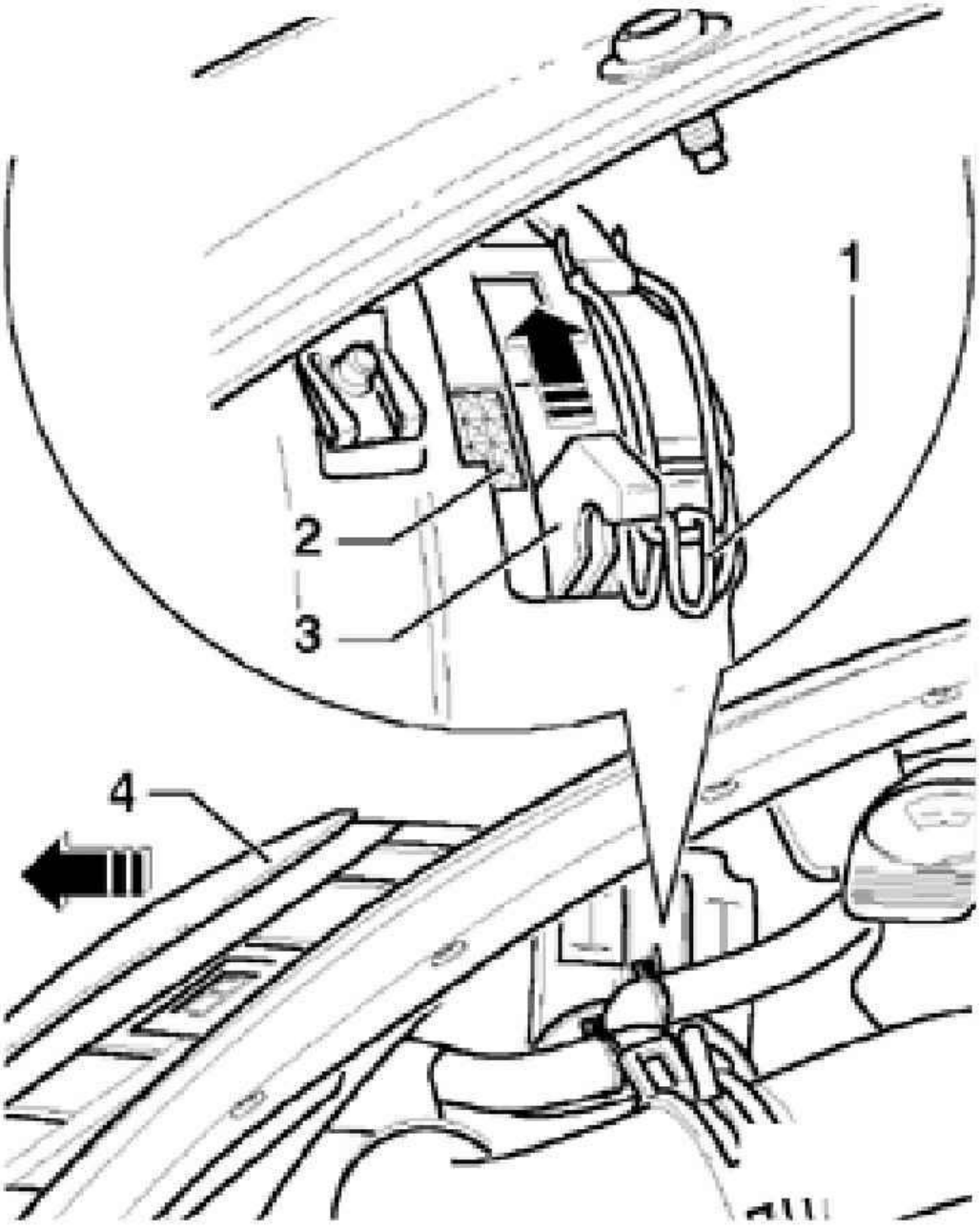


**Fig. 6: Pressing Release Button And Pushing Up Lever**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Pull headlight housing -4- slightly forward.
- Disconnect electrical connectors from headlight.
- Remove headlight housing -4-.

**Right headlight, installing**

- Connect electrical connectors to headlight.
- Insert headlight into guide tracks (arrows) and push inward.

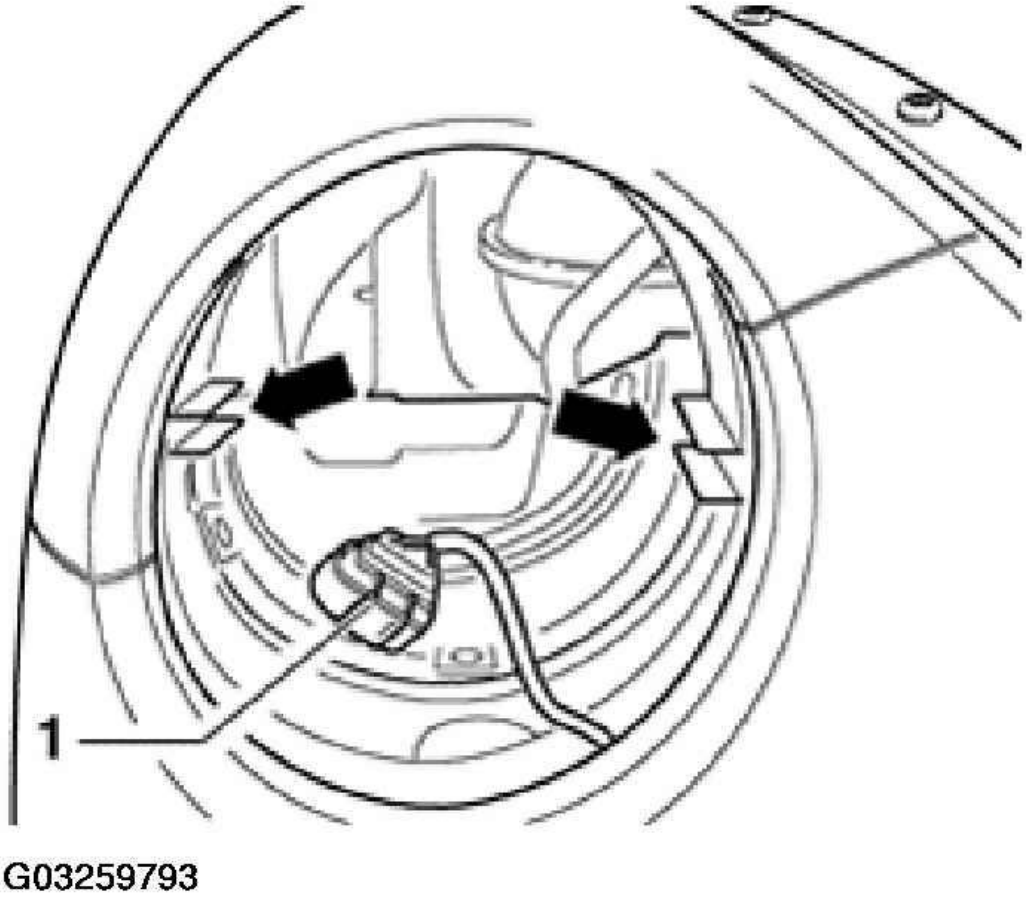


**Fig. 7: Inserting Headlight Into Guide Tracks**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Push down on lever in engine compartment to lock headlight.
- Reconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .

- Check headlight aim.

  See **HEADLIGHT ADJUSTMENT, CHECKING** .

## HEADLIGHTS FROM 09.98, REMOVING AND INSTALLING

### Left headlight, removing

- Disconnect battery, See .
- Press release button -1- and push up lever -2-.
- Pull headlight housing -3- slightly forward.
- Disconnect electrical connectors from headlight.
- Remove headlight housing -3-.

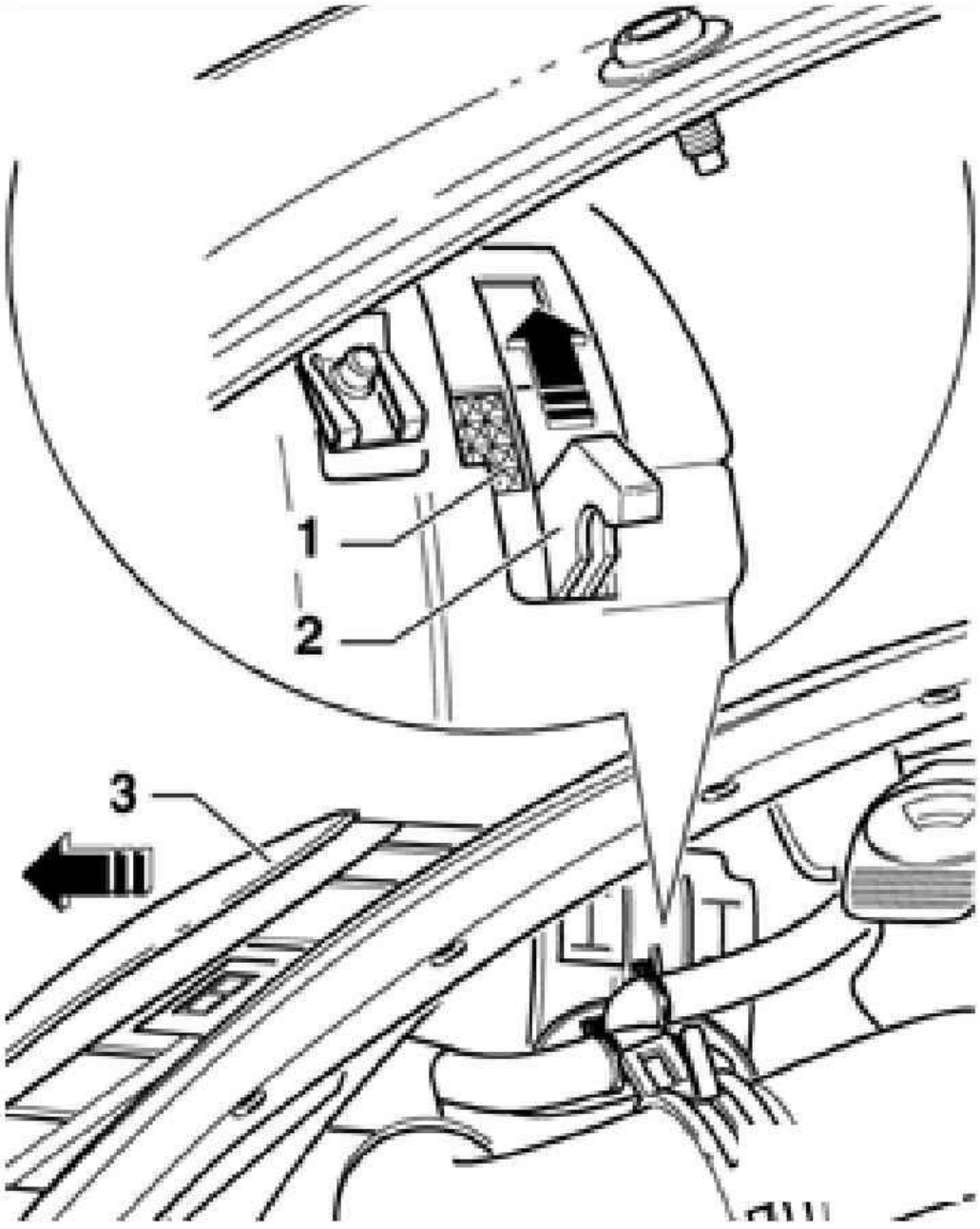


**Fig. 8: Removing Button And Push Up Lever (Left)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Left headlight, installing**

- Connect electrical connectors -1- to headlight.
- Insert headlight into guide tracks (arrows) and push inward.

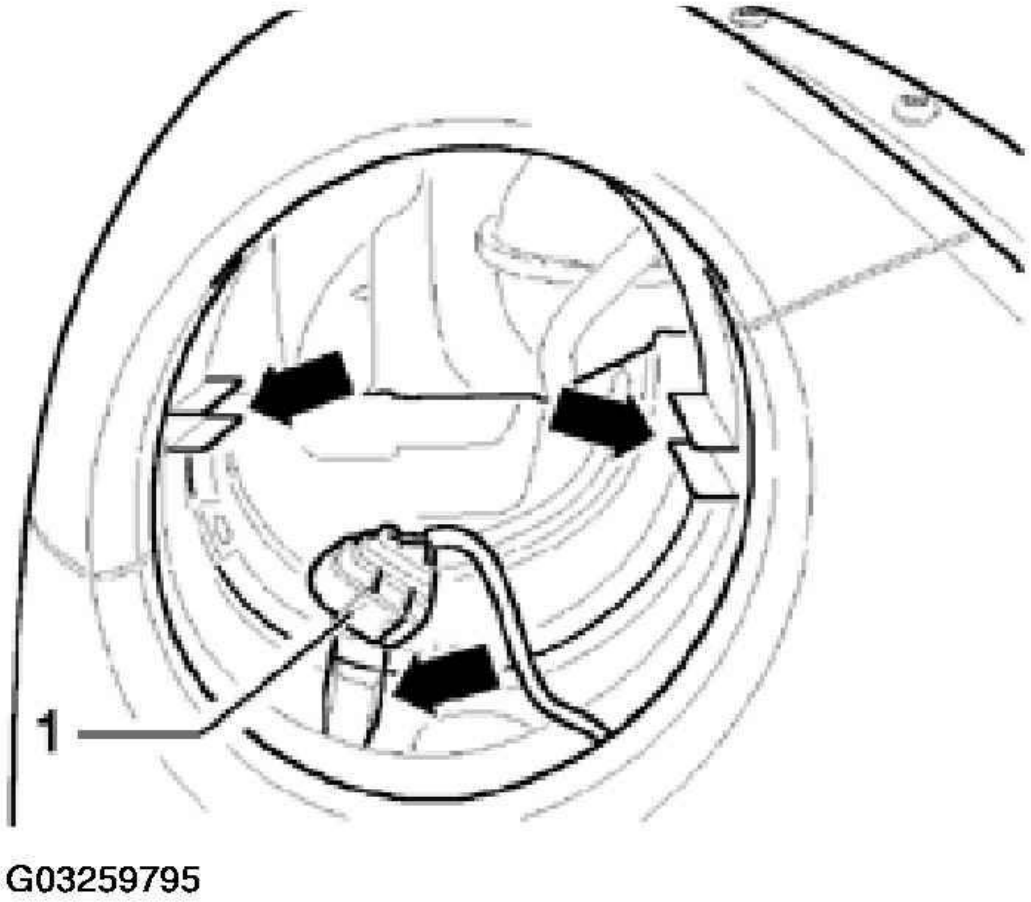


**Fig. 9: Inserting Headlight Into Guide Tracks (Left)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Push down on lever in engine compartment to lock headlight.
- Reconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Check headlight aim.

  See **HEADLIGHT ADJUSTMENT, CHECKING** .

**Right headlight, removing**

- Disconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .

- Press release button -1- and push up lever -2-.

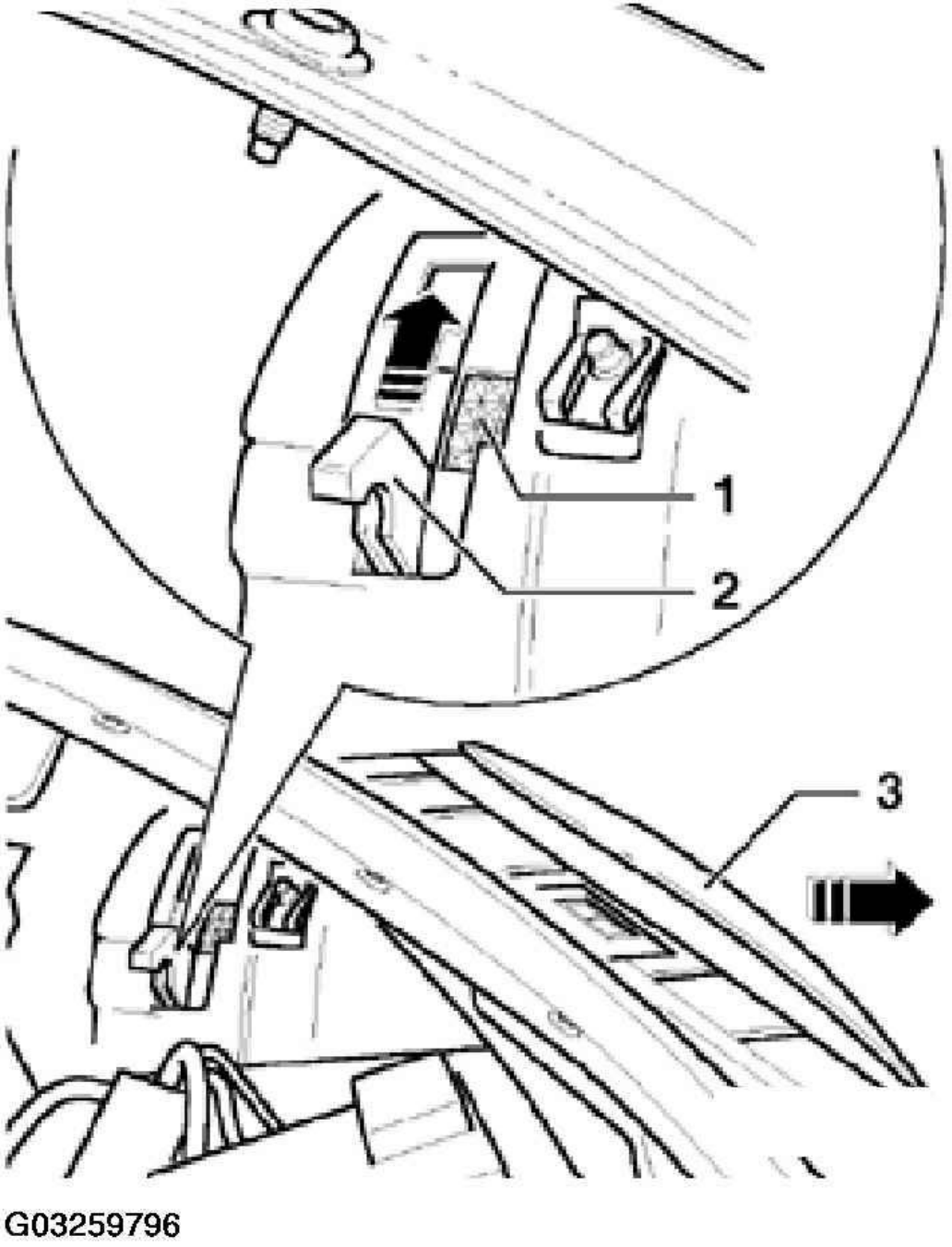


**Fig. 10: Pressing Release Button And Pushing Up Lever (Right)**

**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Pull headlight housing -3- slightly forward.
- Disconnect electrical connectors from headlight.
- Remove headlight housing -3-.

**Right headlight, installing**

- Connect electrical connectors to headlight.
- Insert headlight into guide tracks (arrows) and push inward.

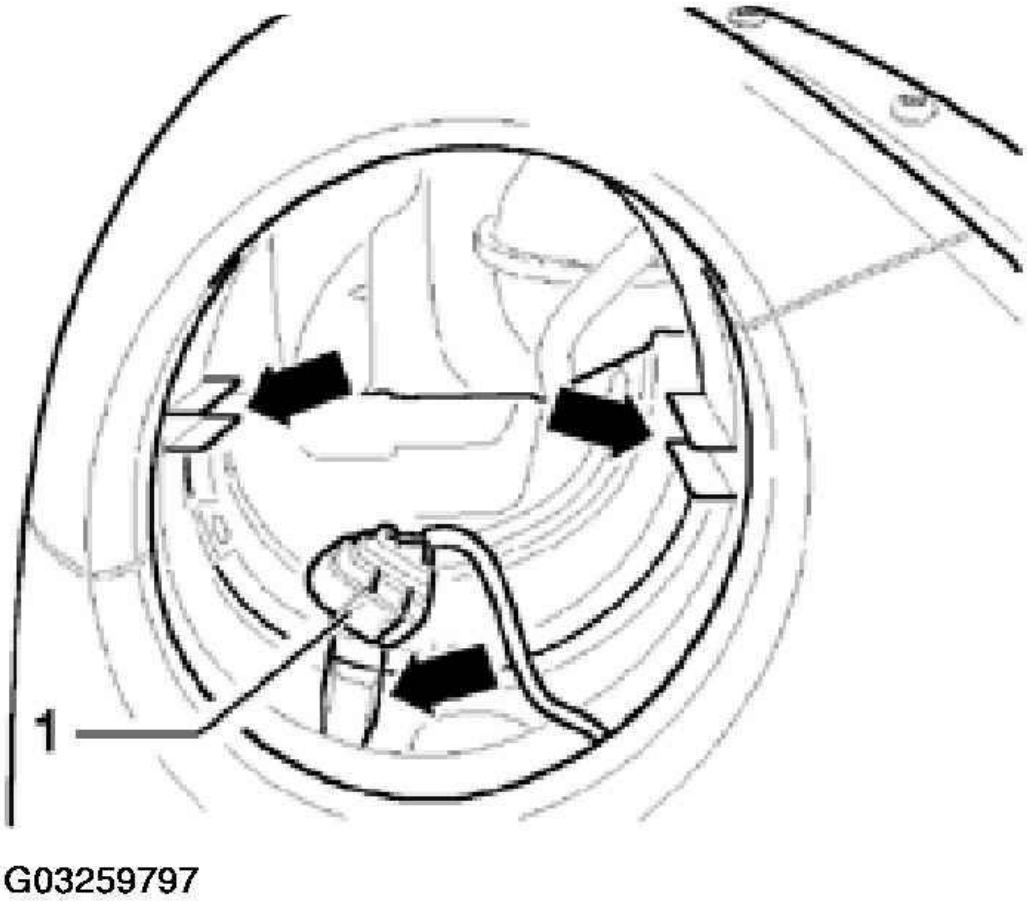


**Fig. 11: Inserting Headlight Into Guide Tracks**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Push down on lever in engine compartment to lock headlight.

- Reconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Check headlight aim.

  See **HEADLIGHT ADJUSTMENT, CHECKING** .

**HEADLIGHTS, ADJUSTING**

**NOTE:**

- **Always adjust lights with optical headlight aimer VAS 5107, using detailed aiming procedure and specifications**

  **See HEADLIGHT ADJUSTMENT, CHECKING .**

- **Low and high beams are adjusted simultaneously.**

Left headlight:

A. Height adjustment
B. Lateral adjustment

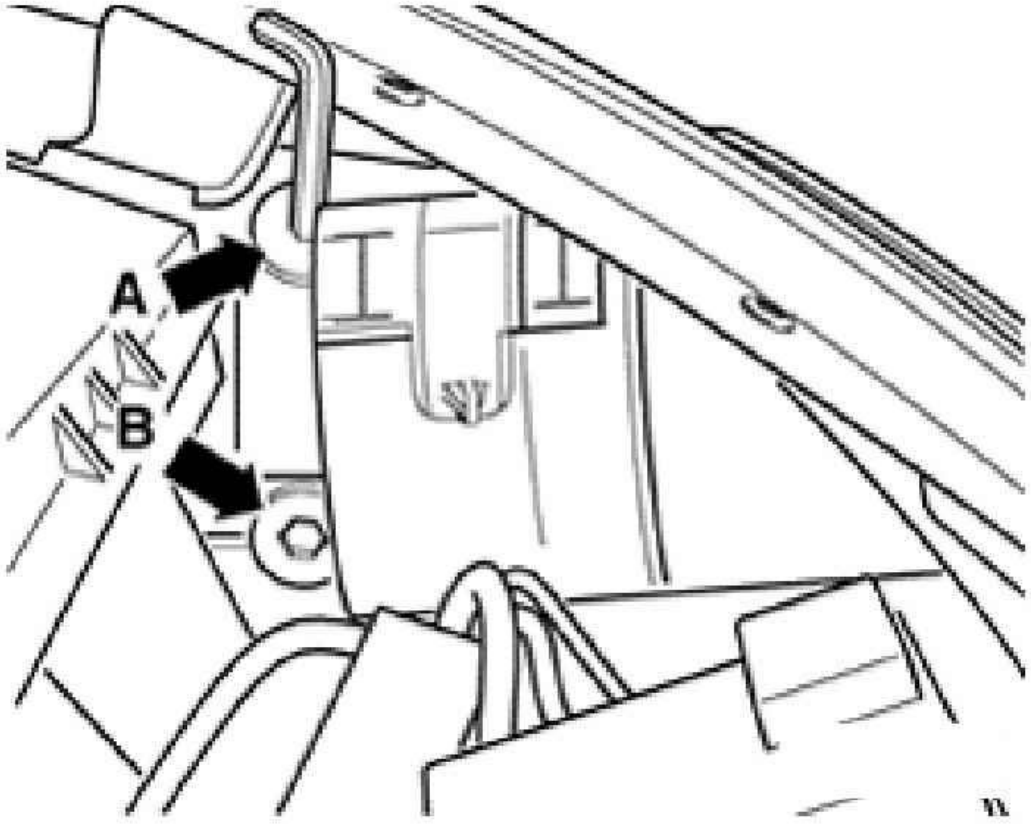


**Fig. 12: Identifying Left Headlight Adjustment Points**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

Right headlight:

A. Height adjustment
B. Lateral adjustment
    - Turn adjusting screws for lateral adjustment -B- and height adjustment -A- until correct setting is achieved.

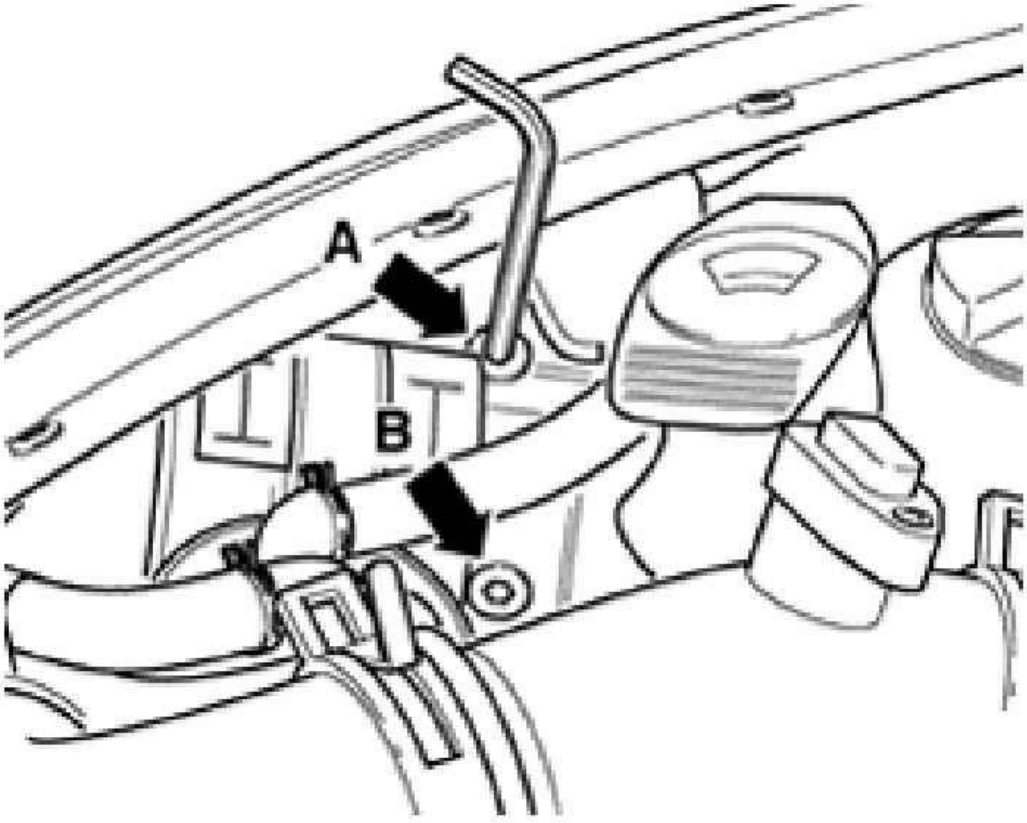


**Fig. 13: Identifying Right Headlight Adjustment Points**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

## FOG LAMPS THROUGH 06.00, REMOVING AND INSTALLING

### Removing

- Disconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Disconnect electrical connection at fog lamp assembly.
- Remove front end assembly

  See **FRONT END, ASSEMBLY OVERVIEW** .

- Remove screws -arrows- on inside of front bumper.

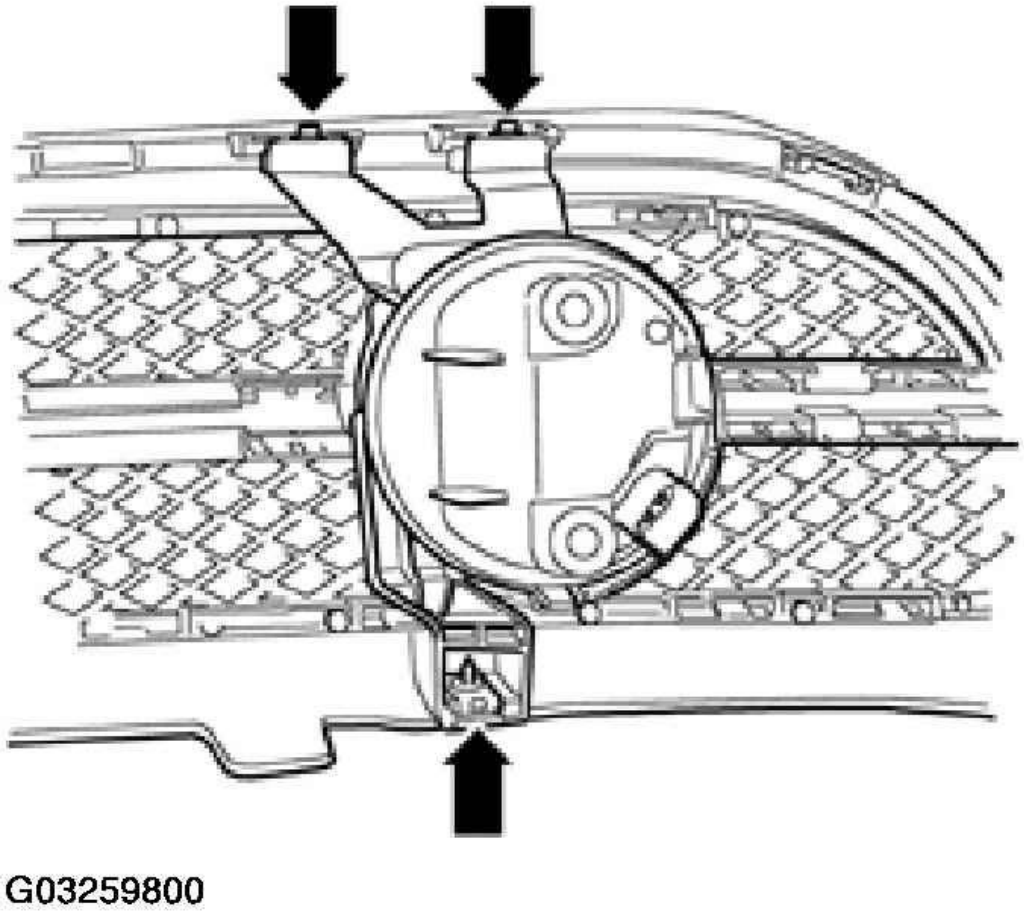


**Fig. 14: Locating Fog Lamp Screws (Through 06.00)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove fog lamp assembly.

**Installing**

- Insert fog lamp assembly into front bumper and secure with screws.
- Connect electrical connection.
- Reinstall front end.

  See **FRONT END, ASSEMBLY OVERVIEW** .

- Reconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Check fog lamp aim

See **HEADLIGHT ADJUSTMENT, CHECKING** .

**FOG LAMPS FROM 07.00, REMOVING AND INSTALLING.**

**NOTE:**

- **A revised front end with removable air grille was introduced from 07.00 production.**
- **The air grille is unclipped from the lower portion of the front end and removed together with the fog lamps.**

**Removing**

- Disconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Disconnect electrical connections at fog lamp assembly.
- Remove lower front air grille

  See **FRONT END, ASSEMBLY OVERVIEW** .

- Remove screws -arrows-.
- Remove fog lamp assembly.

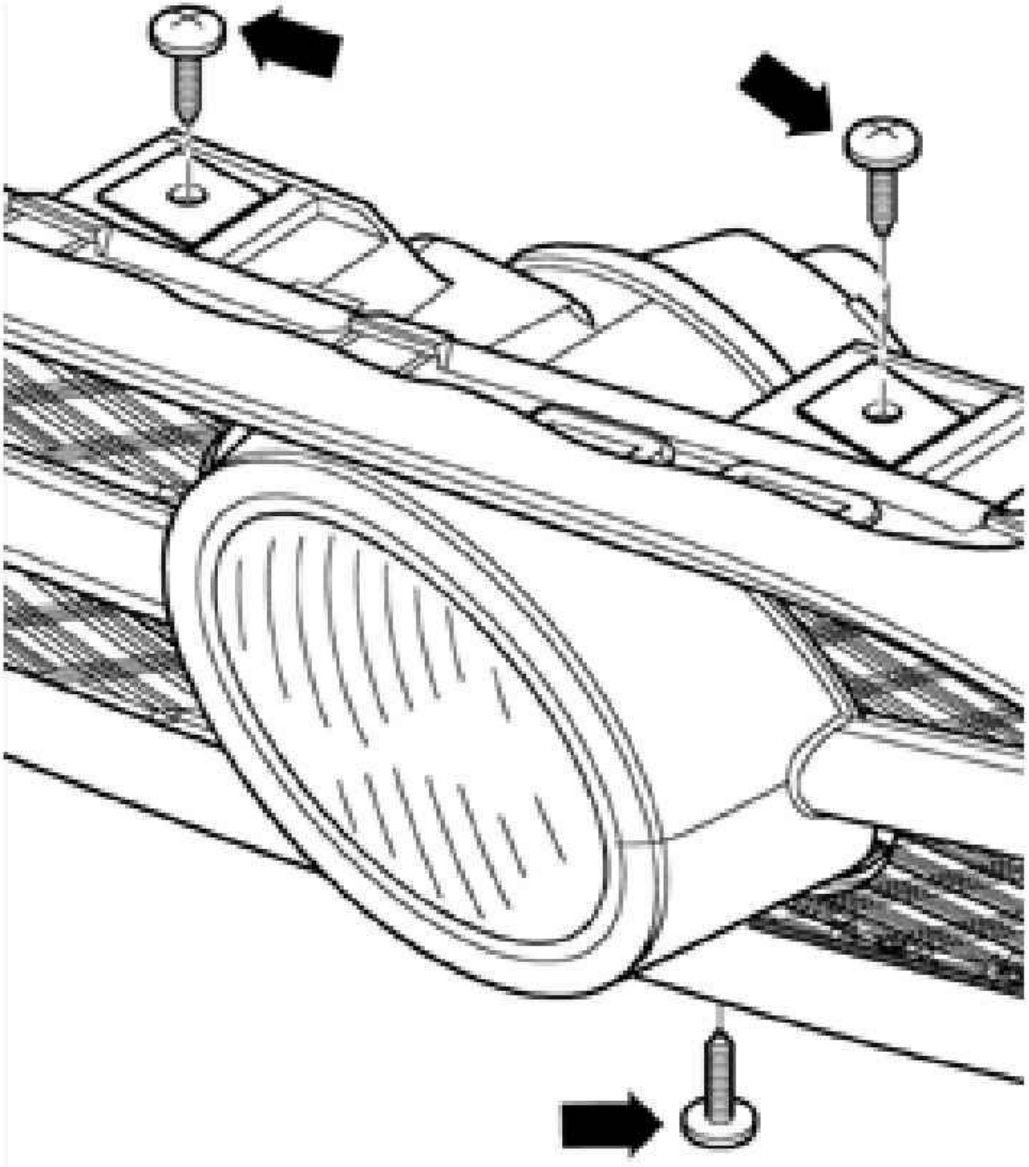


**Fig. 15: Locating Fog Lamp Assembly Screws (From 07.00)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Installing**

- Insert fog lamp assembly in air grille and secure with screws.

- Reinstall air grille.

  See **FRONT END, ASSEMBLY OVERVIEW** .

- Connect electrical connection.
- Reconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Check fog lamp aim

  See **FOG LAMP, ALIGNMENT** .

**FOG LAMPS, ADJUSTING**

**NOTE: Always adjust fog lamps with optical headlight aimer VAS 5107, using detailed aiming procedure and specifications**

See **FOG LAMP, ALIGNMENT** .

Fog lamp (left)

- Turn adjustment screw -arrow- to adjust beam height. Lateral adjustments are not possible.

Adjustment screw on right fog lamp is a mirror image.

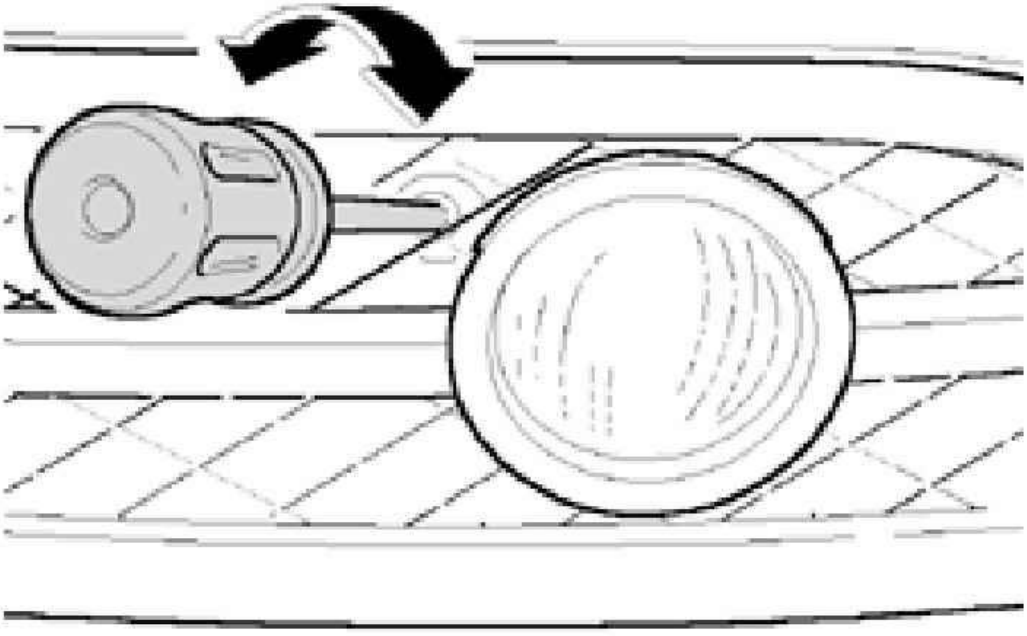

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**Fig. 16: Turning Fog Lamp Adjustment Screw**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**FOG LAMP BULB, REPLACING**

**CAUTION:**
- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Disconnect electrical connection at fog lamp assembly.
- Turn sealing cap on rear of assembly and remove.
- Disconnect electrical connection from fog lamp bulb.
- Release spring retaining clip.
- Remove bulb from reflector.

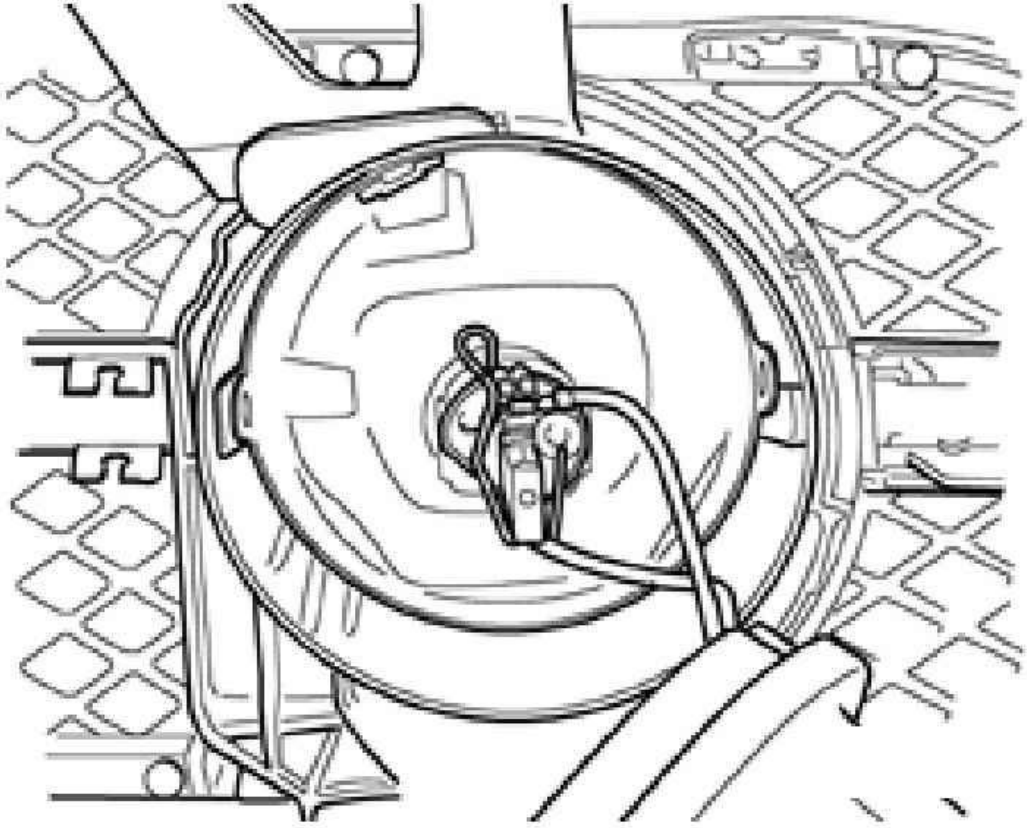



**Fig. 17: Disconnecting Electrical Connection At Fog Lamp Assembly**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Installing**

**CAUTION: Do not touch the glass portion of the bulb with bare hands. The moisture and/or grease from fingers that evaporates on the bulb during operation, can cause the glass to cloud over.**

- Insert new bulb so lugs on plate align with grooves in reflector.
- Connect electrical connection to bulb and reinstall cap, on assembly.
- Connect electrical connection to fog lamp assembly.
- Check fog lamp aim

See **FOG LAMP, ALIGNMENT** .

# HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMPS

## GENERAL INFORMATION

**WARNING:**

- **HIGH VOLTAGE!**
- **Always disconnect negative (-) battery terminal prior to servicing any parts of the HID lamp system marked with the yellow "HIGH VOLTAG!"symbol.**
- **After disconnecting battery, briefly turn headlights on and off in order to discharge any residual voltage.**
- **The physical and mechanical properties of HID bulbs are very sensitive. Internal pressure of HID glass bulb may exceed 100 bar (in operation). Bulb temperature may exceed 700 degrees Celsius.**
- **The control modules for HID lamps must never be operated (headlights turned on) without an HID lamp.**
- **HID bulbs must only be operated (headlights turned on) when installed in the headlight housing.**
- **Always wear safety glasses and gloves when removing and installing HID bulb.**
- **Never look directly at an operating HID bulb. The UV emissions of an HID bulb are approximately 2.5 times that of a comparable halogen bulb.**

## ON BOARD DIAGNOSTIC (OBD), FUNCTION

The automatic vertical headlight beam adjusting control module of the HID headlight system is controlled by an internal microprocessor with On Board Diagnostic (OBD) capability. If malfunctions occur in monitored components, Diagnostic Trouble Codes (DTC) will be stored in memory.

Troubleshoot system malfunctions, code control modules or perform basic settings with OBD program. Use VAS 5051 Vehicle Diagnostic Testing and Information System or VAS 5052 Vehicle Diagnostic and Service System in mode "Guided Fault Finding".

- Enter appropriate model, equipment and model year information and press ">" to confirm.

After the DTC memory of all control modules has been checked:

- Press "Go to" button
- Select "Function / Component Selection"
- Select: "Body (Repair Group 01; 27; 50 to 97)"
- Select: "Electrical System (Repair Group 01; 27; 90 to 97)"
- Select: "01 - On Board Diagnostic (OBD) capable systems"
- Select: "Automatic vertical headlight aim control"

- Select: appropriate option
- Follow tester prompts

**HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMPS, SYSTEM OVERVIEW**

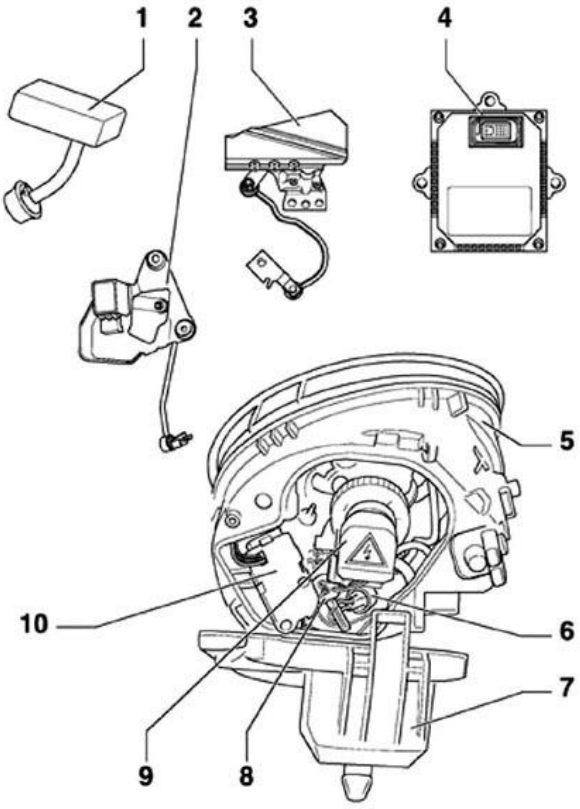
**CAUTION: Before beginning repairs on the electrical system:**

- **Obtain the anti-theft radio security code.**
- **Switch off all electrical consumers.**
- **Switch off ignition and remove ignition key.**
- **Disconnect negative (-) battery terminal.**
- **When disconnecting and reconnecting battery terminals, observe all applicable Notes and torque specifications, as well as instructions on performing OBD program and electrical system function checks as specified. See BATTERY, DISCONNECTING AND RECONNECTING .**

**NOTE: The following list refers to items in Fig. 18 .**

1. **Left/Right Control Module for High Intensity Gas Discharge (HID) Lamp -J343- / -J344-**
   - Integrated with headlight unit.
   - Modules cannot be replaced separately; replace complete headlight housing, See **HEADLIGHT HOUSING WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REMOVING AND INSTALLING** .
2. **Left Front Level Control System Sensor -G78-**
   - Removing and installing, See **LEFT FRONT LEVEL CONTROL SYSTEM SENSOR -G78-, REMOVING AND INSTALLING** .
   - Adjusting, See **LEFT FRONT LEVEL CONTROL SYSTEM SENSOR -G78-, ADJUSTING** .
3. **Left Rear Level Control System Sensor -G76-**
   - Removing and installing, See **LEFT REAR LEVEL CONTROL SYSTEM SENSOR -G76-, REMOVING AND INSTALLING** .
   - Checking adjustment, See **LEFT REAR LEVEL CONTROL SYSTEM SENSOR -G76-, CHECKING** .
4. **Left/Right High Intensity Gas-discharge Lamp (with range control) Control Module -J567- / -J568-**
   - -J567- (left) is "master" control module.
   - Location: left front wheel housing
   - Removing and installing, See **LEFT HIGH INTENSITY GAS-DISCHARGE LAMP (WITH RANGE CONTROL) CONTROL MODULE -J567-, REMOVING AND INSTALLING** .
   - -J568- (right) is "slave" control module
   - Location: right front/inner long member.
   - Removing and installing, See **RIGHT HIGH INTENSITY GAS-DISCHARGE LAMP (WITH RANGE CONTROL) CONTROL MODULE -J568-, REMOVING AND INSTALLING** .

5. **Headlight housing**
    - Removing and installing, See **HEADLIGHT HOUSING WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REMOVING AND INSTALLING** .
6. **Parking light bulb**
    - Halogen bulb 12 V, 6W
    - Removing and installing, See **PARKING LIGHT BULBS, REMOVING** .
7. **Sealing cap**
    - Removing and installing, See **HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REPLACING BULBS** .
8. **High beam bulb**
    - H7 12V, 55 W
    - Removing and installing, See **HIGH BEAM BULB, REMOVING** .
9. **High Intensity Gas Discharge (HID) lamp**
    - Used for low beam
    - Type DS2, 35W
    - Operating voltage 80V to 117V
    - Removing and installing, See **HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REPLACING BULBS** .
10. **Headlight beam adjusting motor -V48- / -V49-**
    - Removing and installing, See **HEADLIGHT BEAM ADJUSTING MOTOR -V48- / -V49-, REMOVING AND INSTALLING** .




1 - Left/Right Control Module for High Intensity Gas Discharge (HID) Lamp -J343- / -J344-

2 - Left Front Level Control System Sensor -G78-

3 - Left Rear Level Control System Sensor -G76-

4 - Left/Right High Intensity Gas-discharge Lamp (with range control) Control Module - J567- / -J568-

5 - Headlight housing

6 - Parking light bulb

7 - Sealing cap

8 - High beam bulb

9 - High Intensity Gas Discharge (HID) lamp

10 - Headlight beam adjusting motor - V48- / -V49-

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**Fig. 18: Identifying Headlights With High Intensity Gas Discharge (Hid) Lamps**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

## HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REPLACING BULBS

**WARNING:**

- **HIGH VOLTAGE!**
- **Always disconnect negative (-) battery terminal prior to servicing any parts of the HID lamp system marked with the yellow "HIGH VOLTAGE!"symbol.**
- **After disconnecting battery, briefly turn headlights on and off in order discharge any residual voltage.**
- **Internal pressure of HID glass bulb may exceed 10 bar.**
- **The physical and mechanical properties of HID bulbs are very sensitive. Always wear safety glasses when removing and installing HID bulb**

**HID lamp bulb, removing**

- Remove applicable headlight housing, See **HEADLIGHT HOUSING WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REMOVING AND INSTALLING** .
- Remove screw -1- and open sealing cap by releasing retaining clip -2-.
- Disengage sealing cap from mounting -3-.

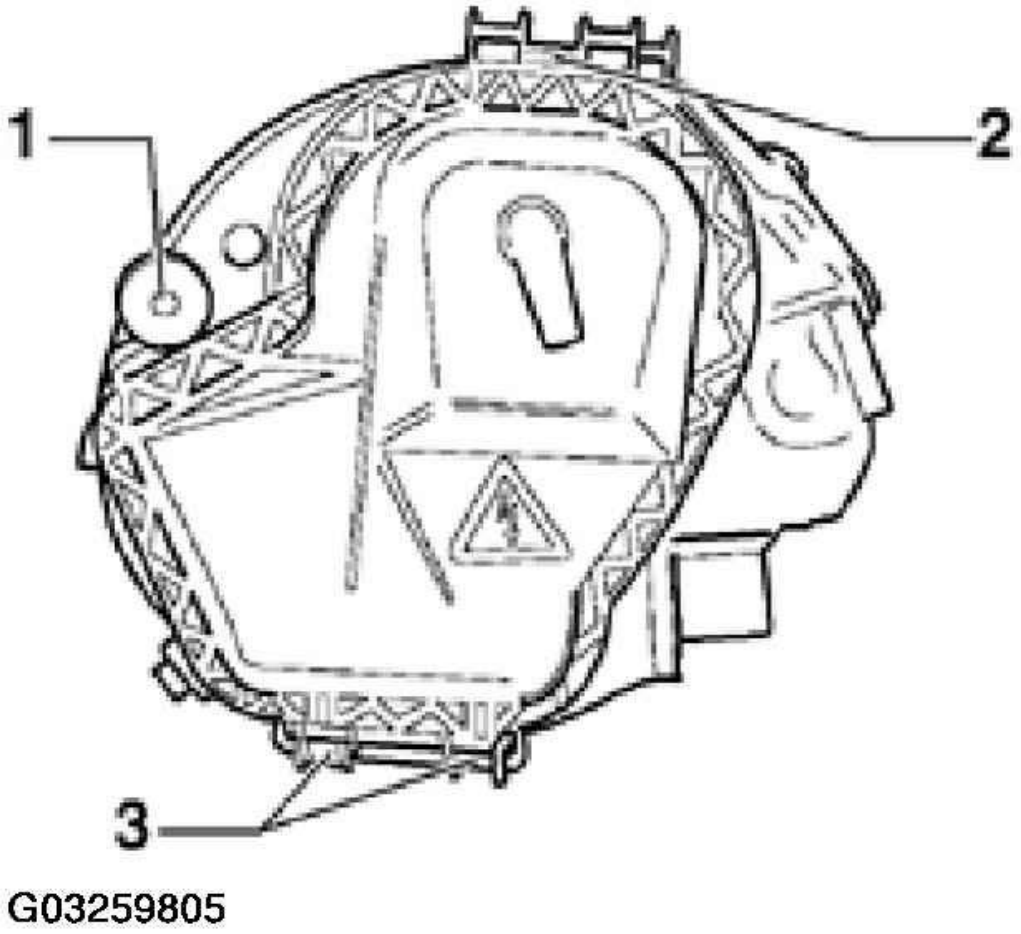



**Fig. 19: Removing Screw And Opening Sealing Cap**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Release connector -1-, by turning 90° to the left -arrow- and pull off.
- Turn gas discharge bulb retaining ring -2- to the left and remove bulb.
- Carefully remove HID bulb.

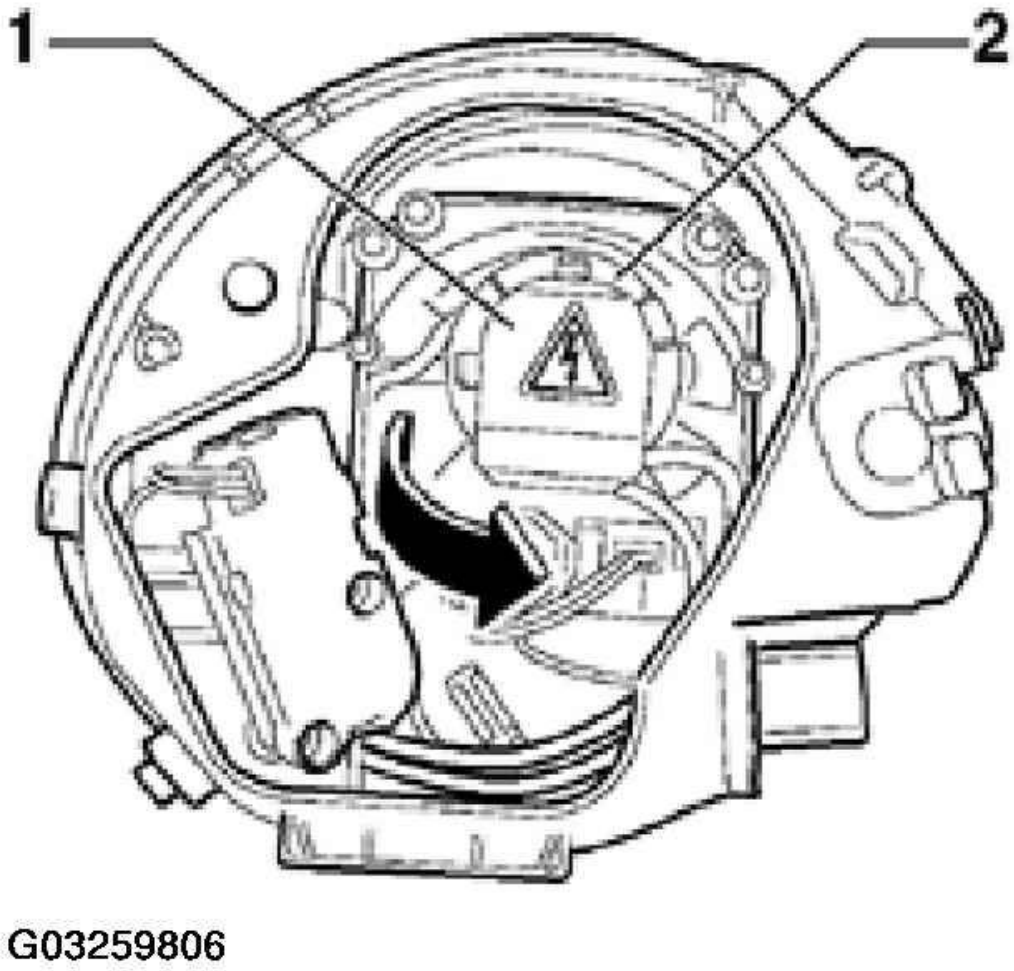



**Fig. 20: Disconnecting HID Lamp Bulb Connector**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**HID lamp bulb, installing**

**CAUTION: Do not touch glass portion of bulb with bare hands. Even the smallest amount of moisture and/or contaminants from fingers that evaporates on the bulb during operation can cause the glass to cloud over.**

- Insert new bulb, making sure that the bulb mounting aligns with the locating lugs in the housing.
- Position retaining ring -1- recesses -arrows-over locking tabs -2- of HID bulb -3- and secure by turning clockwise.
- Reinstall headlight housing, See **HEADLIGHT HOUSING WITH HIGH INTENSITY GAS**

**DISCHARGE (HID) LAMP, REMOVING AND INSTALLING** .

- Check headlight (HID lamp) function.
- Check headlight aim, See **HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, ADJUSTING** .

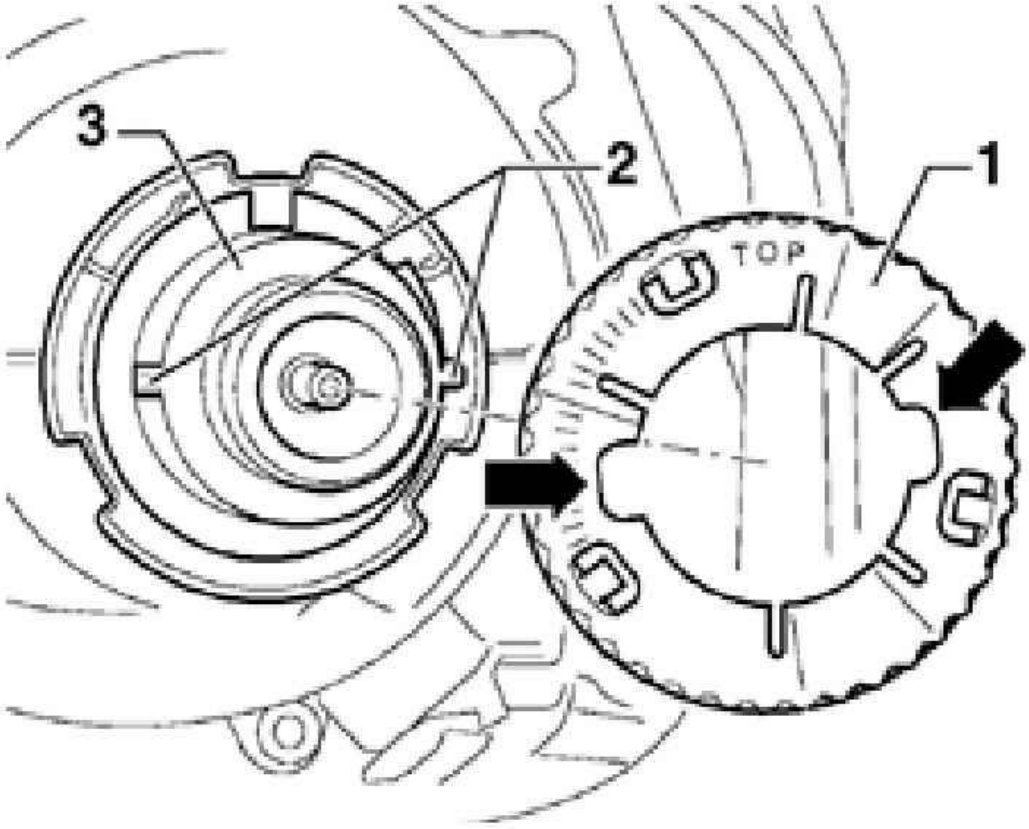



**Fig. 21: Installing Retaining Ring Recesses Over Locking Tabs**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**High beam bulb, removing**

- Remove applicable headlight housing, See **HEADLIGHT HOUSING WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REMOVING AND INSTALLING** .
- Remove sealing cap, See **HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REPLACING BULBS** .
- Turn lever -1- on bulb mounting to left -arrow- to release.

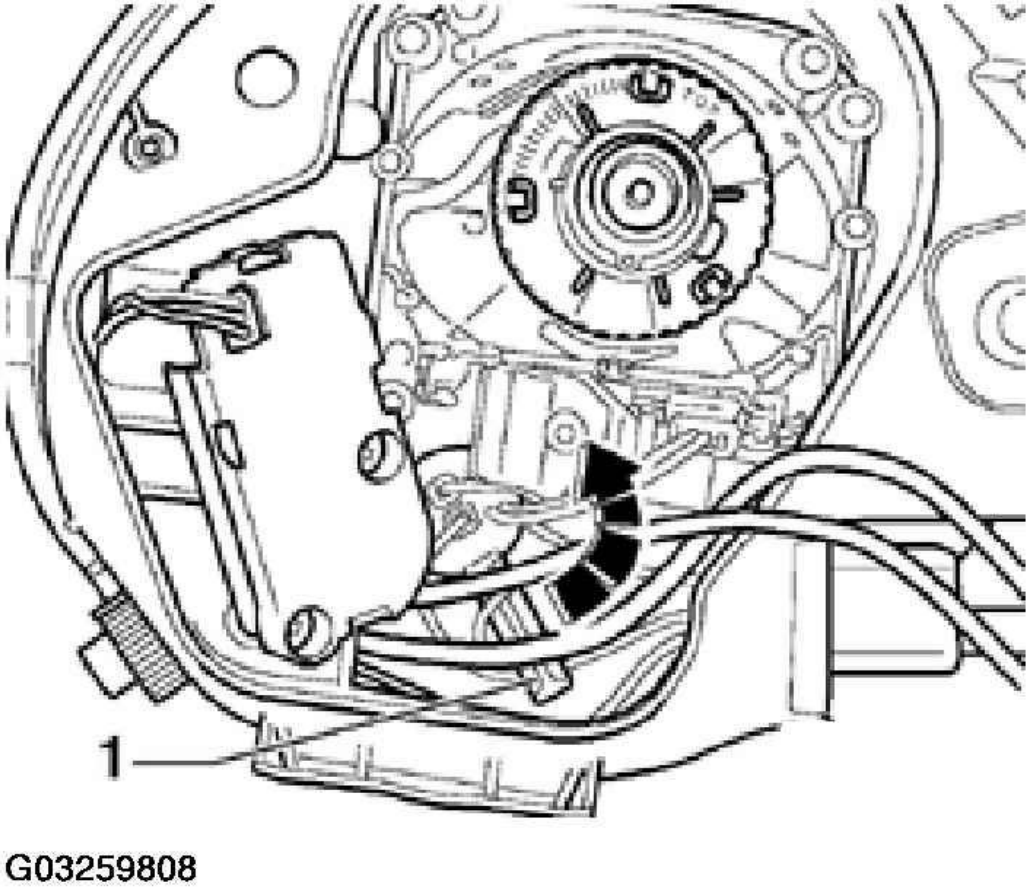



**Fig. 22: Removing Turn Lever On Bulb Mounting To Left**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Pull main beam bulb with mounting out from reflector.

**High beam bulb, installing**

**CAUTION: Do not touch glass portion of bulb with bare hands. Even the smallest amount of moisture and/or contaminants from fingers that evaporates on the bulb during operation can cause the glass to cloud over.**

Installation in reverse sequence of removal.

- Check headlight (high beam bulb) function.
- Check headlight aim, See **HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, ADJUSTING** .

**Parking light bulbs, removing**

- Remove headlight housing, See **HEADLIGHT HOUSING WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REMOVING AND INSTALLING** .
- Remove sealing cap, See **HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REPLACING BULBS** .
- Pull parking light bulb with mounting -arrow- out from reflector.

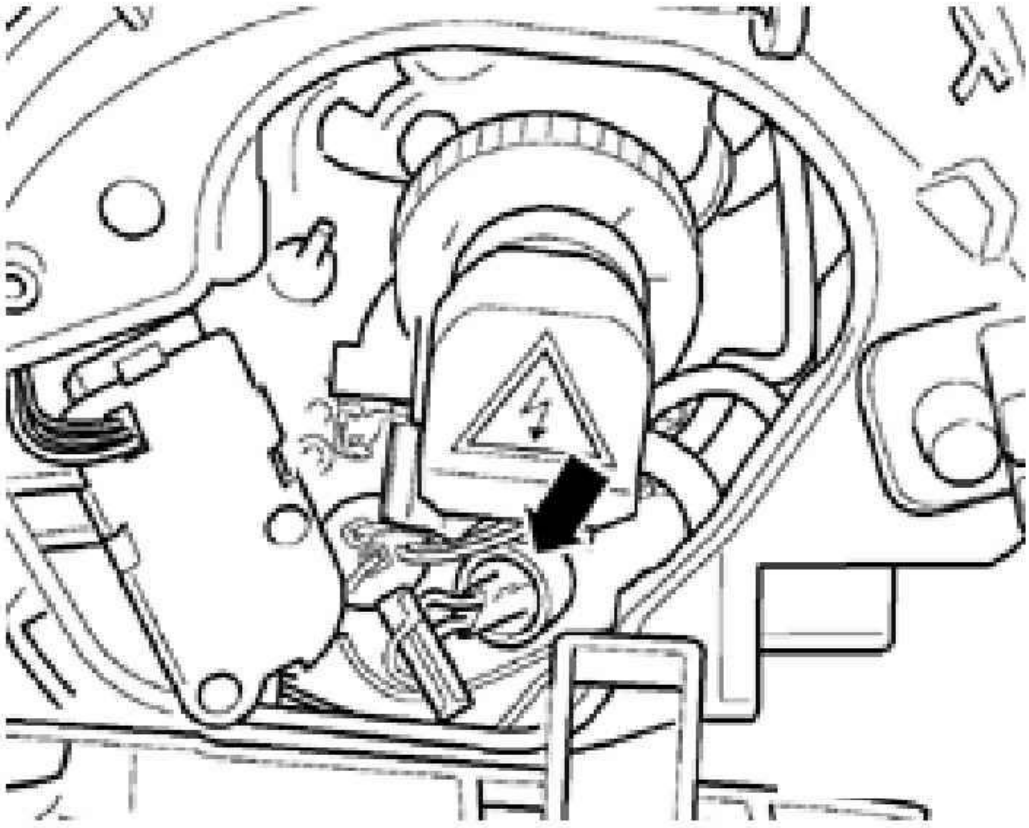



**Fig. 23: Removing Parking Light Bulb With Mounting**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Parking light bulbs, installing**

**CAUTION: Do not touch glass portion of bulb with bare hands. Even the smallest amount of moisture and/or contaminants from fingers that evaporates on the bulb during operation can cause the glass to cloud over.**

Install in reverse order of removal.

- Check parking light (bulb) function.
- Check headlight aim, See **HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, ADJUSTING**

## HEADLIGHT HOUSING WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REMOVING AND INSTALLING

### Left HID headlight, removing

- Disconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Disengage retainer -1- downwards and slide lever -2- upwards.
- Pull headlight housing -3- forward slightly.
- Disconnect electrical connection from headlight.

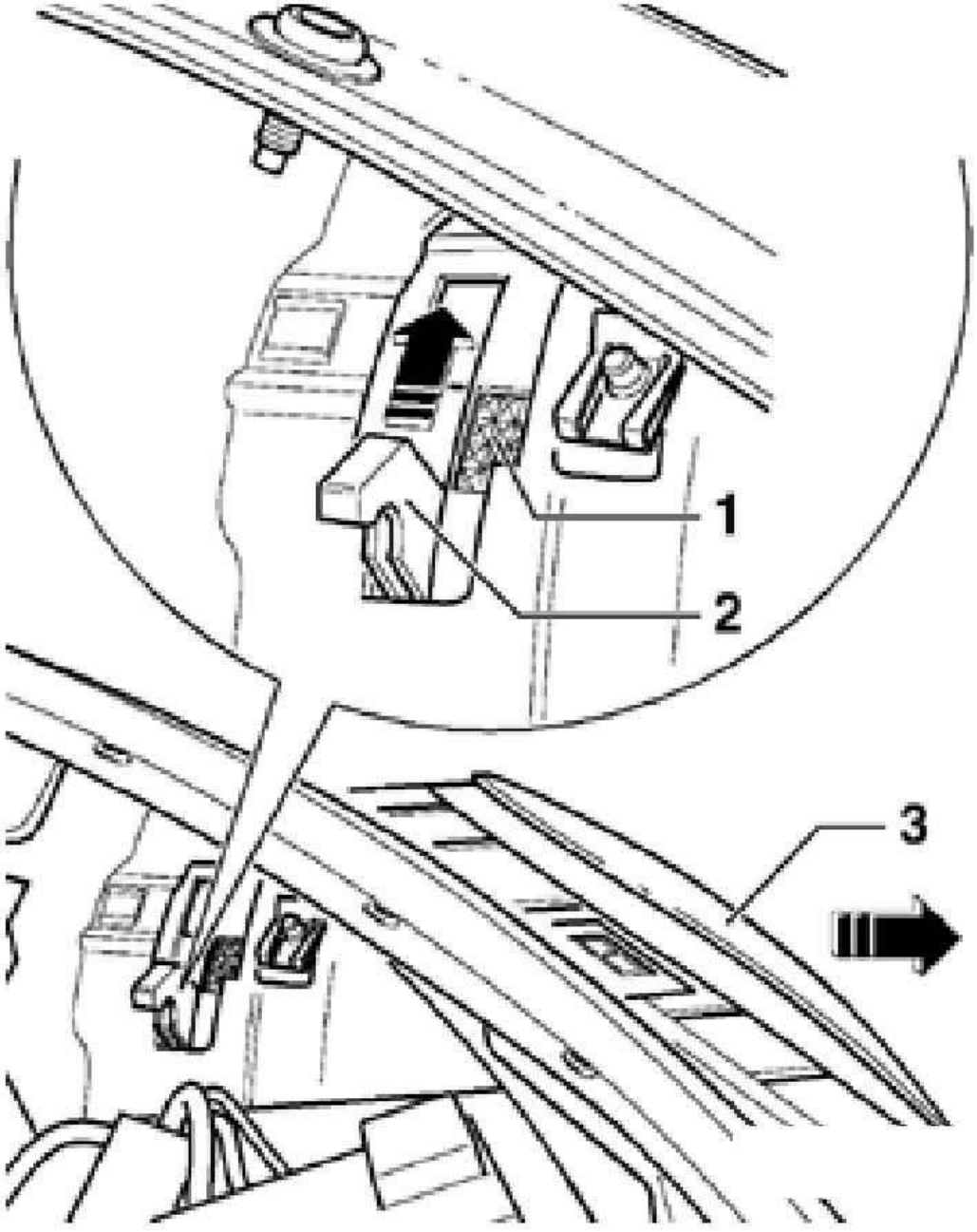



**Fig. 24: Disconnecting Electrical Connection From Headlight (Left Side)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Slide headlight housing forward and out from fender opening.

**Left HID headlight, installing**

- Reconnect electrical connection -1- to headlight.
- Position headlight insert in guide rails -arrows- and slide unit to rear.
- Move lever in engine compartment down again to engage retainer.
- Reconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Check headlight aim. See **HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, ADJUSTING** .

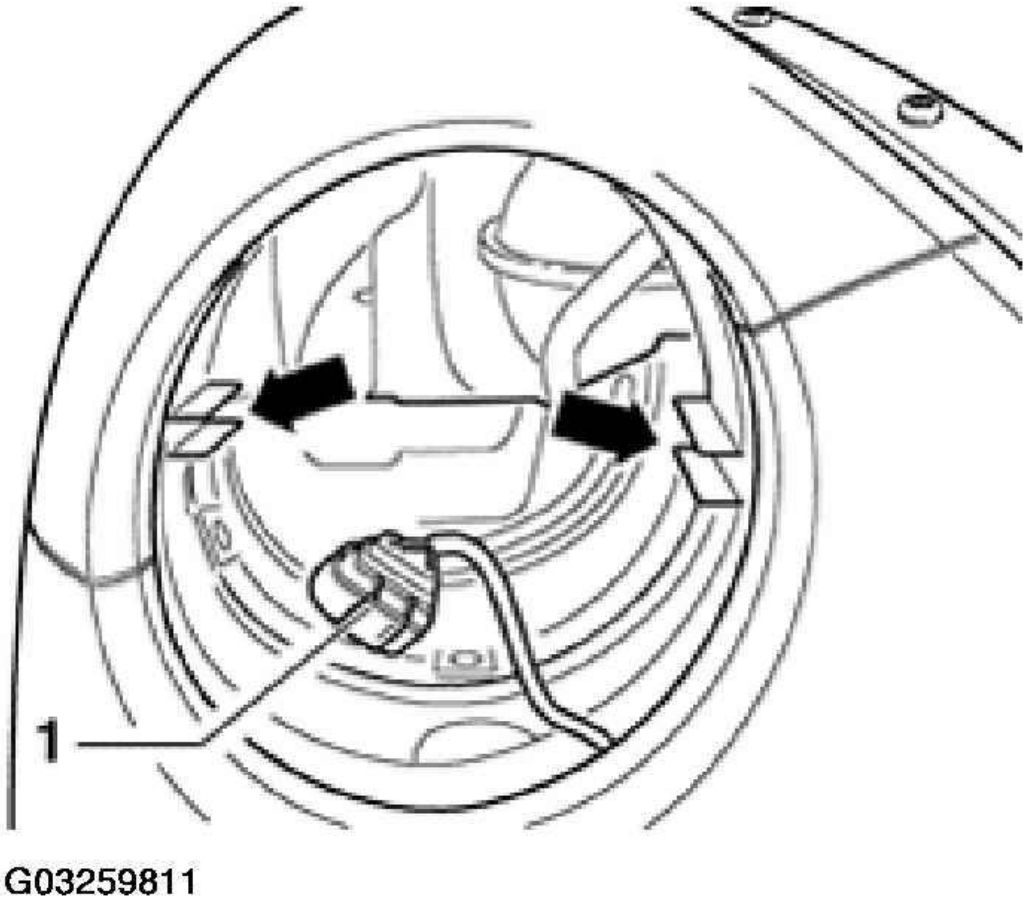



**Fig. 25: Connecting Electrical Connection To Headlight**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Right HID headlight, removing**

- Disconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Disengage retainer -1- downwards and slide lever -2- upwards.
- Pull headlight housing -3- forward slightly.
- Disconnect electrical connector from headlight.

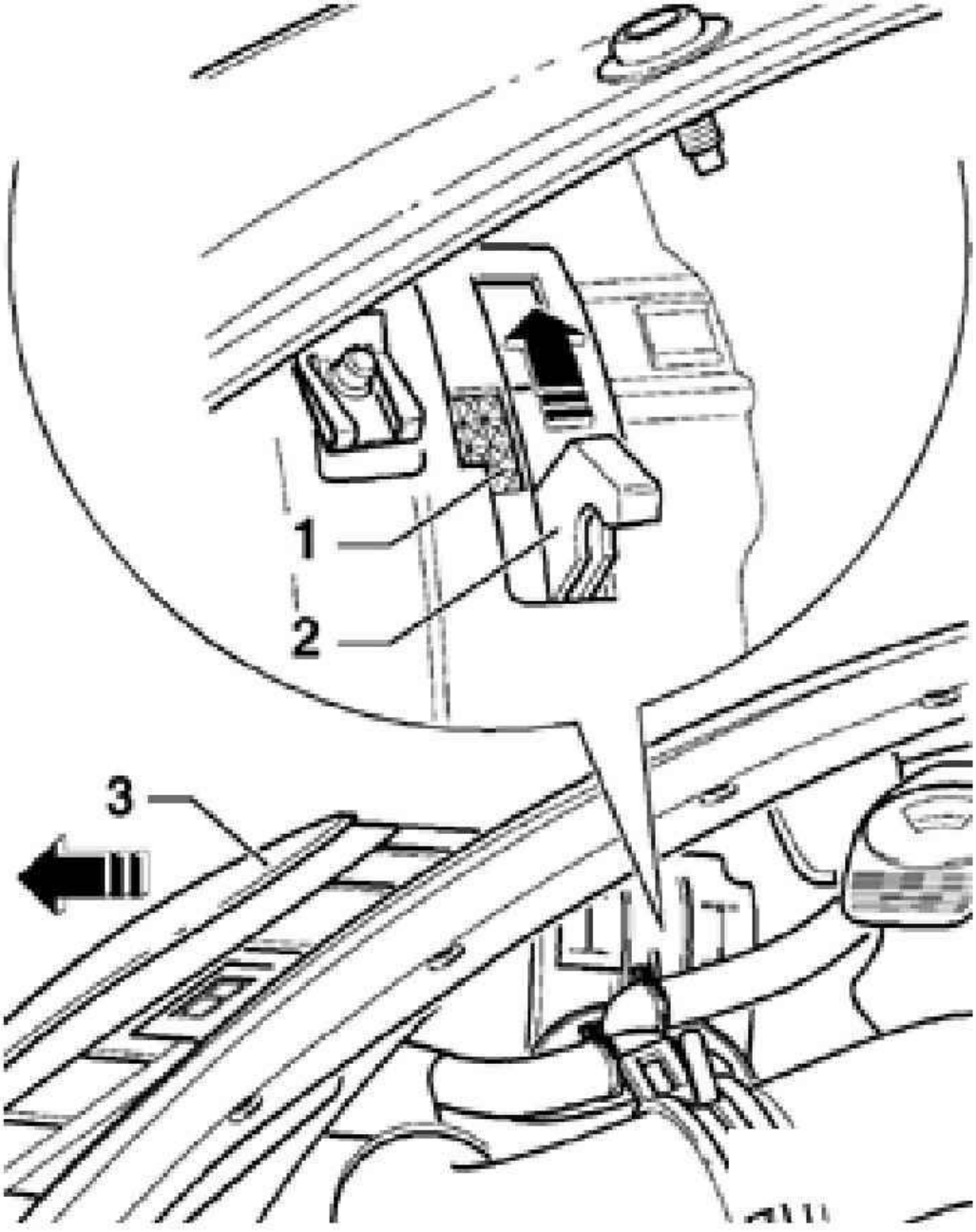



**Fig. 26: Disconnecting Electrical Connector From Headlight (Right Side)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Slide headlight housing forward and out from fender opening.

**Right HID headlight, installing**

- Reconnect electrical connection -1- to headlight.
- Position headlight insert in guide rails -arrows- and slide unit to rear.
- Move lever in engine compartment downwards again to engage retainer.
- Reconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Checking headlight aim. See **HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, ADJUSTING**

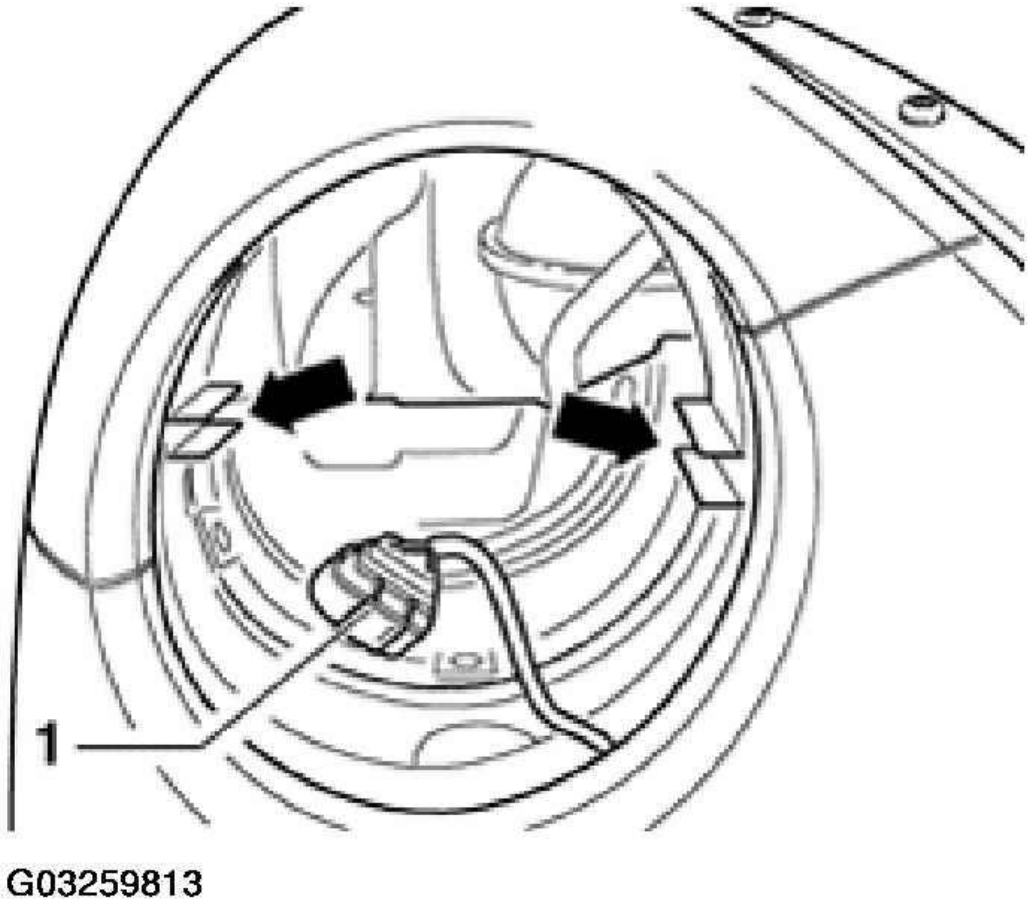



**Fig. 27: Connecting Electrical Connection To Headlight**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

## HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, ADJUSTING

**NOTE:**

- **Aiming must be done in conjunction with On Board Diagnostic (OBD) program "Basic Setting" (function 04). Use VAS 5051 Vehicle Diagnostic Testing and Information System in mode "Guided Fault Finding"**
- **Always adjust lights with optical headlight aimer VAS 5107, using detailed aiming procedure and specifications**

  **See HEADLIGHT ADJUSTMENT, CHECKING .**

- **Low and high beams are adjusted simultaneously.**

Where applicable, also check/confirm position of driving direction selector on headlight housing. Confirm setting for the USA/CDN: "left-hand drive as follows:

**Driving direction setting, checking (where applicable)**

HID lamps may have a mechanism that allows beam patterns to be changed according to market. Potential glare is thus minimized.

- Remove headlight housing, See **HEADLIGHT HOUSING WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REMOVING AND INSTALLING** .
- Remove sealing cap. See **HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REPLACING BULBS** .
- Confirm selector -1- to be in lower setting -down arrow-.
  - Selector up -A-: right-hand drive (e.g.: Great Britain - Australia etc.)
  - Selector down -B-: left-hand drive (e.g.: USA -Canada - Europe etc.)

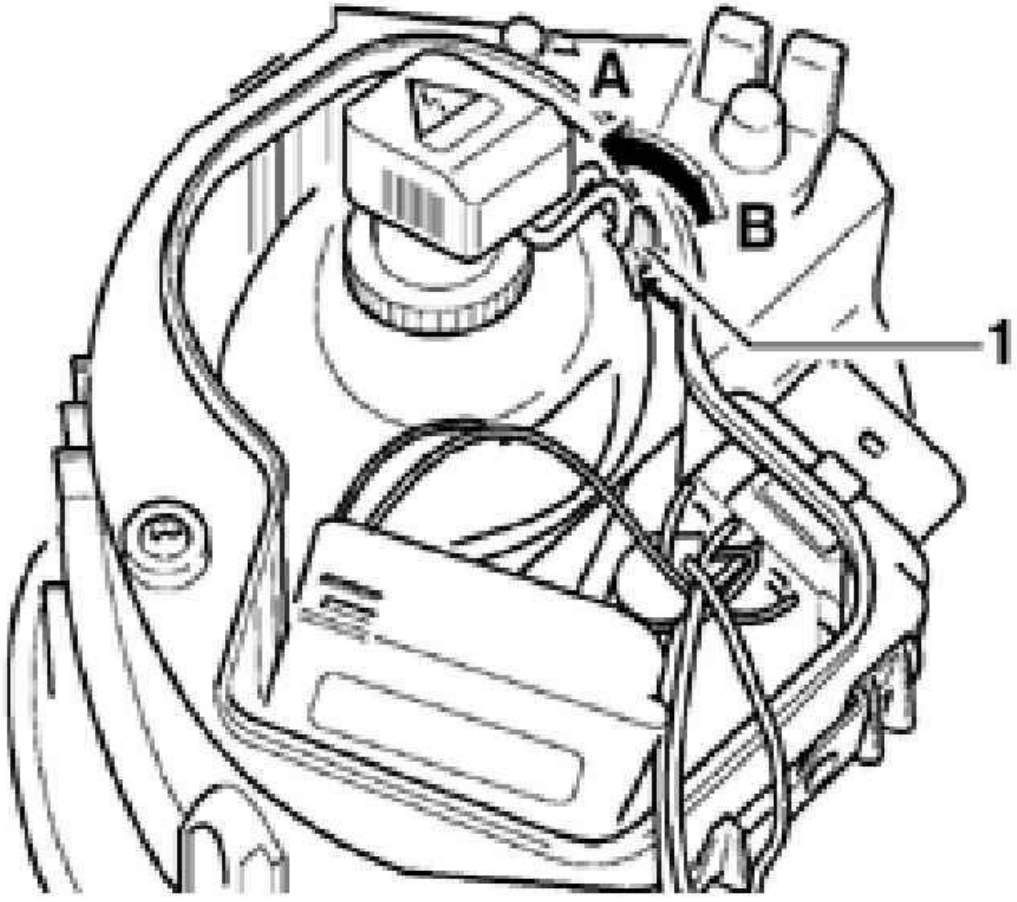



**Fig. 28: Checking Driving Direction Setting**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**LEFT HIGH INTENSITY GAS-DISCHARGE LAMP (WITH RANGE CONTROL) CONTROL MODULE -J567-, REMOVING AND INSTALLING**

**WARNING:**

- **HIGH VOLTAGE!**
- **Always disconnect negative (-) battery terminal prior to servicing any parts of the HID lamp system marked with the yellow "HIGH VOLTAGE!"symbol.**
- **After disconnecting battery, briefly turn headlights on and off in order discharge any residual voltage.**

The (master) control module is located in the left front wheel housing.

**Removing**

- Remove left front wheel housing liner. See **FRONT WHEEL HOUSING LINER, ASSEMBLY OVERVIEW** .
- Remove nuts/bolts -1- for control module.
- Disconnect electrical connection -2-.

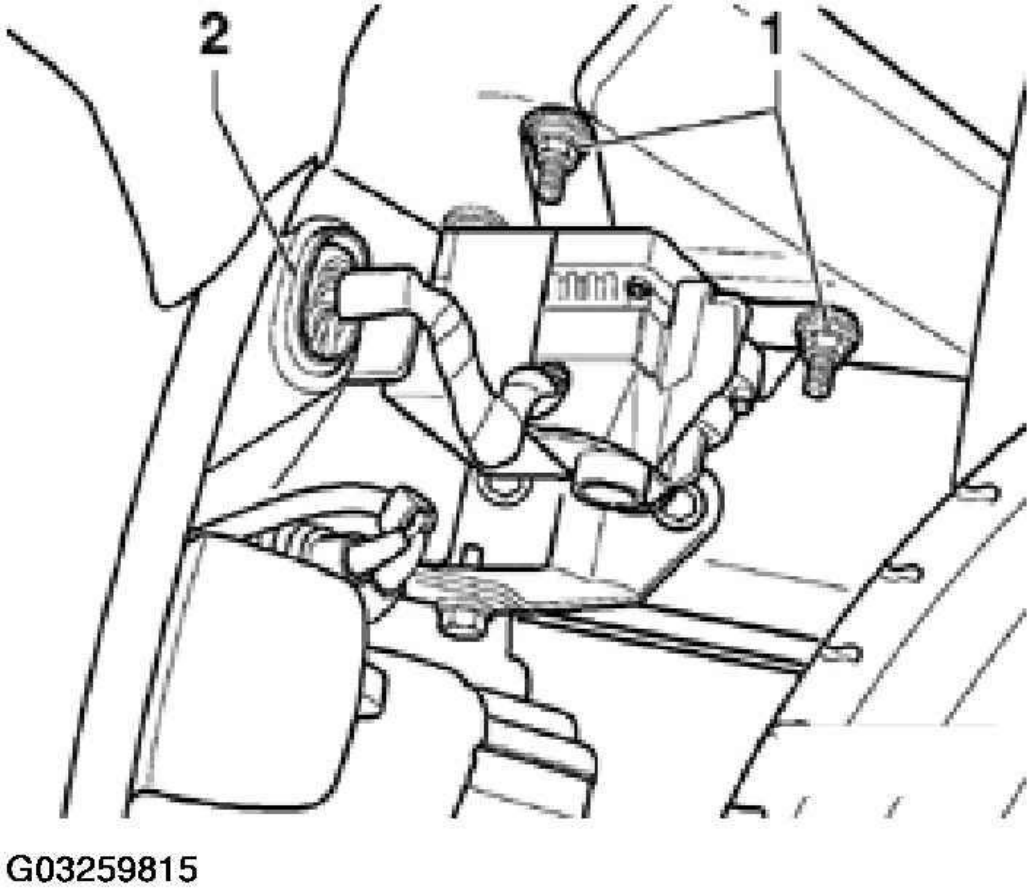



**Fig. 29: Locating Nuts/Bolts For Left High Intensity Gas-discharge Lamp (With Range Control) Control Module**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Installing**

Installation in reverse sequence of removal.

- Check headlight function.
- Code control module (function 07) using On Board Diagnostic program. See **ON BOARD DIAGNOSTIC (OBD), FUNCTION** .
- Perform headlight basic setting (function 04) using On Board Diagnostic program. See **ON BOARD DIAGNOSTIC (OBD), FUNCTION** .

## RIGHT HIGH INTENSITY GAS-DISCHARGE LAMP (WITH RANGE CONTROL) CONTROL MODULE -J568-, REMOVING AND INSTALLING

**WARNING:**

- **HIGH VOLTAGE!**
- **Always disconnect negative (-) battery terminal prior to servicing any parts of the HID lamp system marked with the yellow "HIGH VOLTAGE!"symbol.**
- **After disconnecting battery, briefly turn headlights on and off in order discharge any residual voltage.**

The (slave) control module is located on the right/front inner long member.

**Removing**

- Remove front bumper cover.

  See **BUMPERS** .

- Remove bolts -arrows- on module retainer.

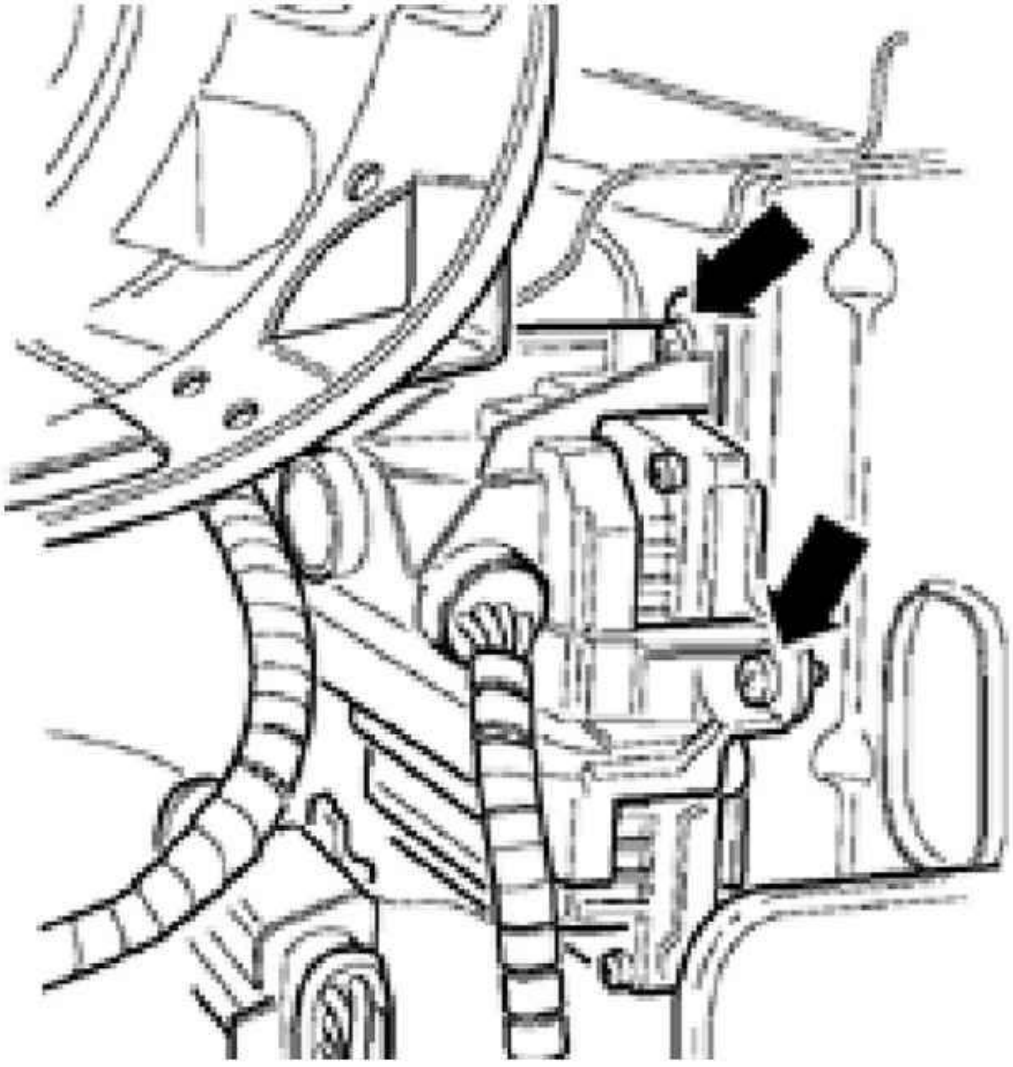



**Fig. 30: Right High Intensity Gas-discharge Lamp (With Range Control) Control Module**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove retainer and module together.
- Disconnect electrical connection from module.

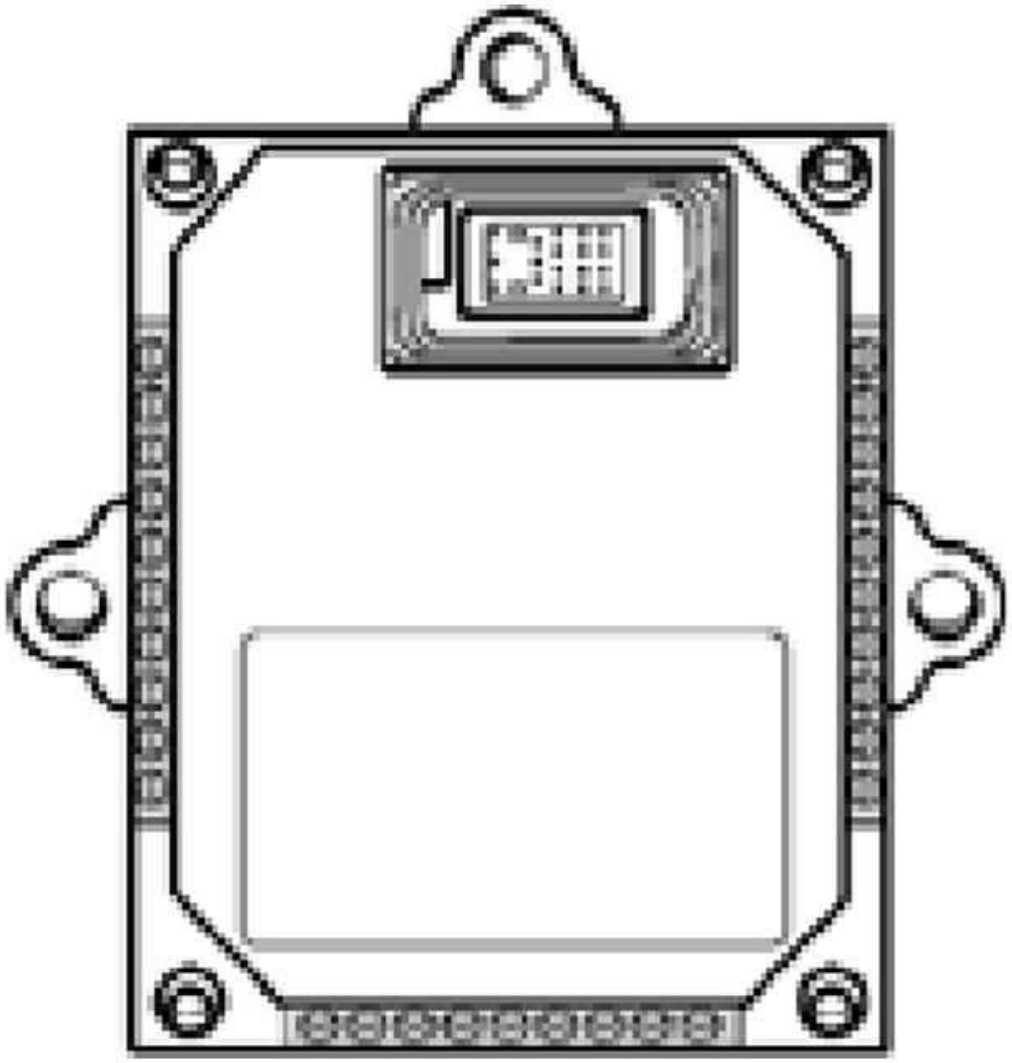



**Fig. 31: Removing Module Screws To Separate Module From Retainer**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove screws and separate module from retainer.

**Installing**

Installation in reverse sequence of removal.

## LEFT FRONT LEVEL CONTROL SYSTEM SENSOR -G78-, REMOVING AND INSTALLING

**Removing**

- Turn steering to full left lock.
- Remove nuts -arrows-.

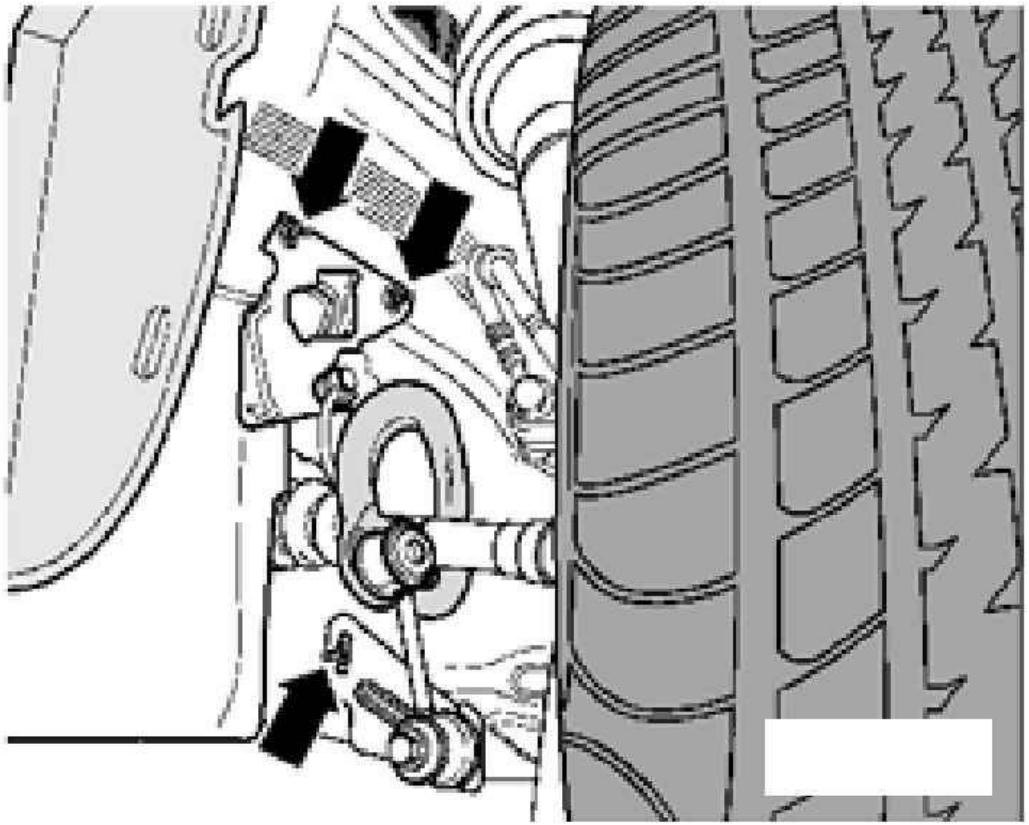



**Fig. 32: Removing Left Front Level Control System Sensor Nuts**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove sensor with retainer.
- Disconnect electrical connection.

**Installing**

Installation in reverse sequence of removal.

- Adjust level sensor, See **LEFT FRONT LEVEL CONTROL SYSTEM SENSOR -G78-, ADJUSTING** .

## LEFT FRONT LEVEL CONTROL SYSTEM SENSOR -G78-, ADJUSTING

**Special tool, testers, and auxiliary items needed**

- VAG 1551/1552 Scan Tool (ST) or VAS 5051 Vehicle Diagnostic Testing and Information System tester.
- VAG 1551/3B Adapter Cable

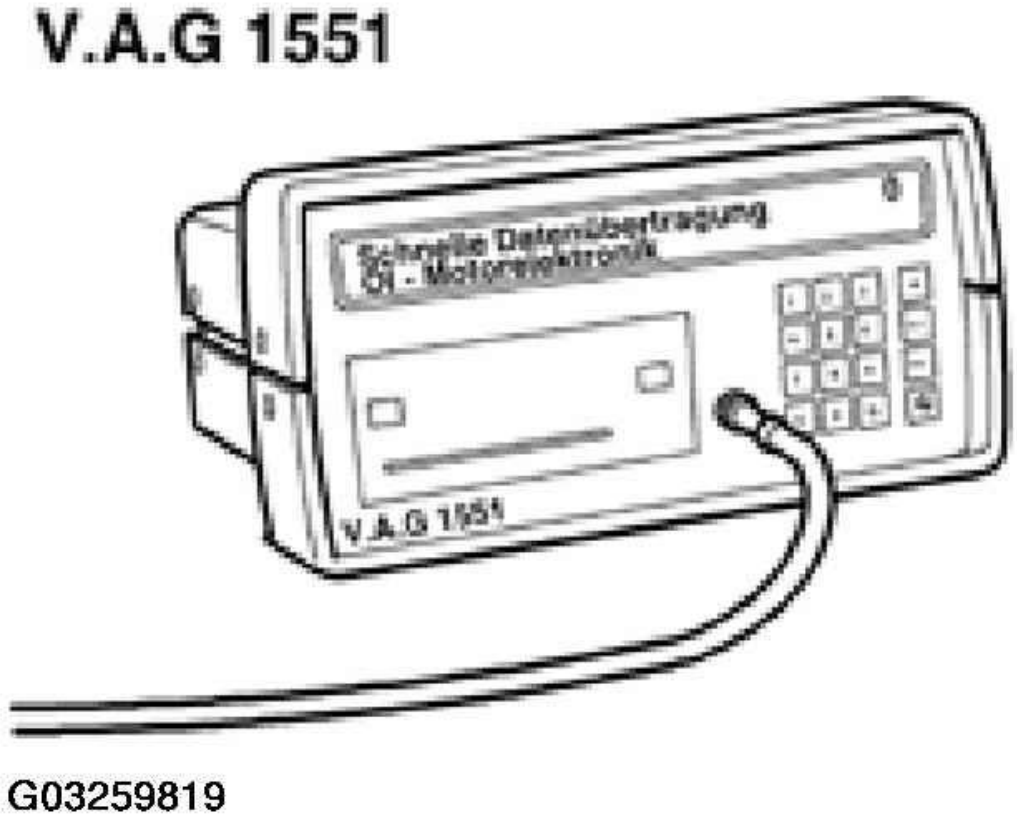



**Fig. 33: Identifying Vag 1551/1552 Scan Tool**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Prerequisites**

- Vehicle must be standing on all four wheels on a flat level surface.
- Handbrake lever must be in off position and a drive gear must not be selected.

- Steering must be in straight-ahead position.
- Vehicle must be unoccupied and not loaded.
- Vehicle must not be moved during basic settings process (i.e.: opening and closing of doors, people leaning on vehicle, people entering vehicle is not permitted).
- If vehicle was raised using a lifting platform/hoist or a vehicle/workshop jack, then it must be rolled back and forth several times so that the springs etc. settle, before starting adjustments.

**VAS 5051 Vehicle Diagnostic Testing and Information System or VAS 5052 Vehicle Diagnostic and Service System, selecting functions**

See **ON BOARD DIAGNOSTIC (OBD), FUNCTION** .

**VAG 1551/1552 Scan Tool (ST), connecting and selecting functions (function 01)**

Prerequisites:

- All fuses OK., according to wiring diagram
- Voltage supply OK. (minimum 9.0 V).
    - Connect Scan Tool (ST) using cable VAG 1551/3B.

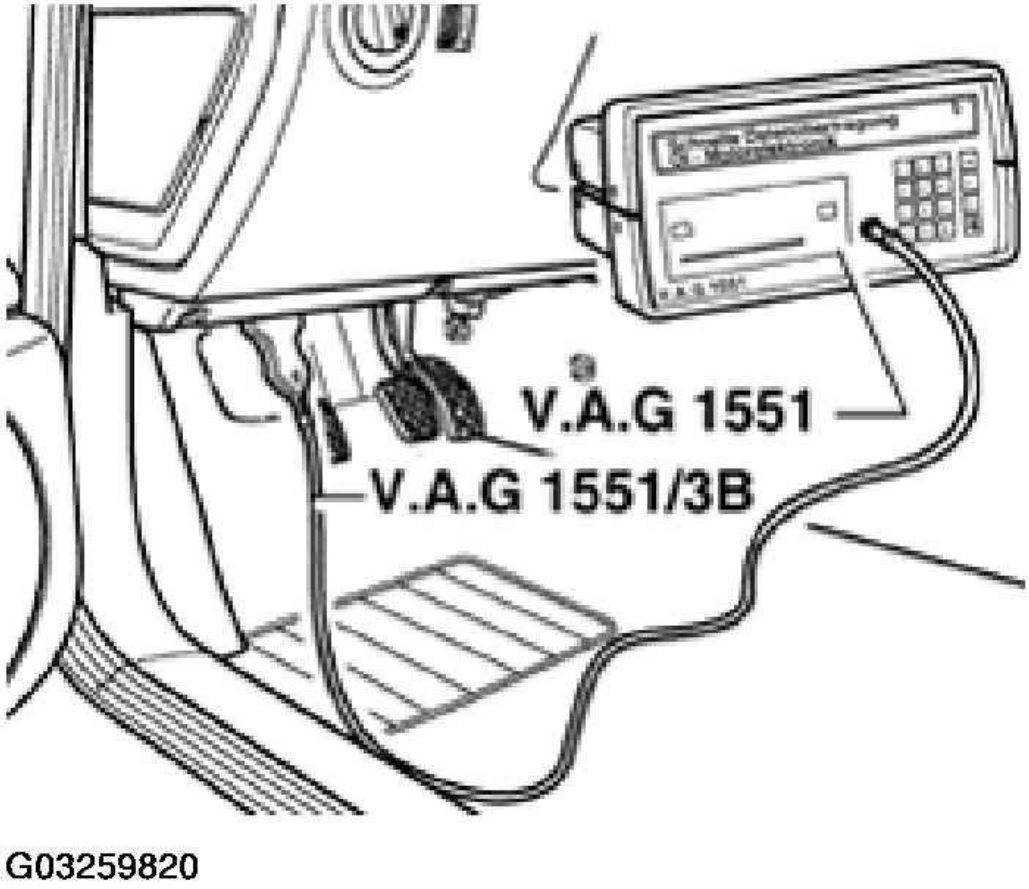



**Fig. 34: Connecting VAG 1551/1552 Scan Tool**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

Indicated on display:

* Appears alternately

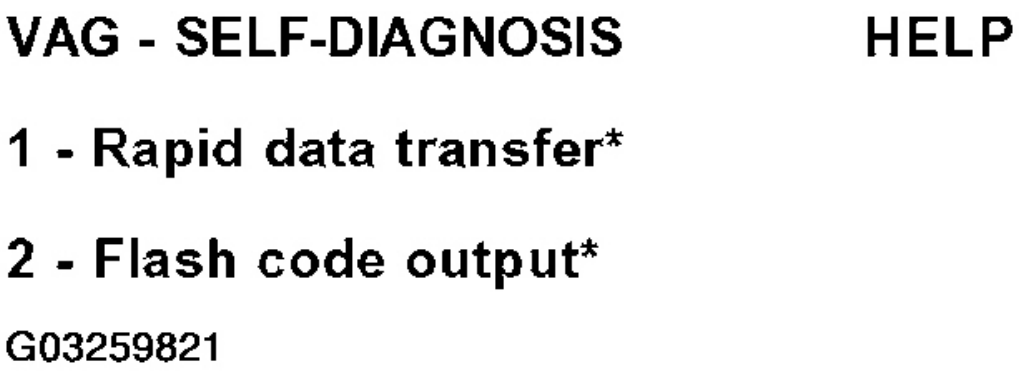



**Fig. 35: VAG 1551/1552 Scan Tool Display - Connecting VAG 1551/1552 Scan Tool (1 Of 9)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**NOTE:**

- **If display remains blank, check VAG 1551 voltage supply according to wiring diagram.**

  **NOTE: See SYSTEM WIRING DIAGRAM article.**

- **Additional operating instructions can be called up with the scan tool HELP key.**
- **The --> key advances the program sequence.**
- **In operating mode 1 "Rapid data transfer" function 00 "Automatic test sequence" can be carried out. The DTC memory of all vehicle control units is checked automatically with function 00..**

- Switch ignition on.
- Switch printer on with the Print key (warning lamp in the key will light up).
- Press key 1 for "Rapid data transfer" operating mode.

Indicated on display:

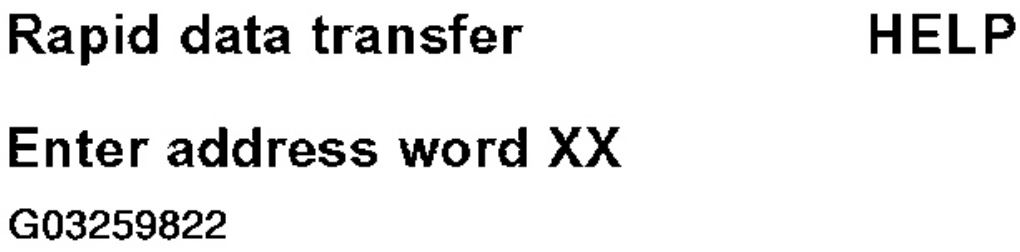



**Fig. 36: VAG 1551/1552 Scan Tool Display - Connecting VAG 1551/1552 Scan Tool (2 Of 9)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press keys -2- and -9- to select "Light control, left" address word "29".

Indicated on display:

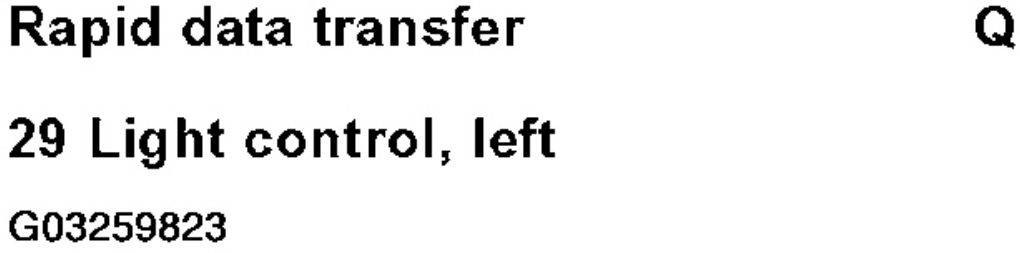



**Fig. 37: VAG 1551/1552 Scan Tool Display - Connecting VAG 1551/1552 Scan Tool (3 Of 9)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press -Q- button to confirm input.

Indicated on display:

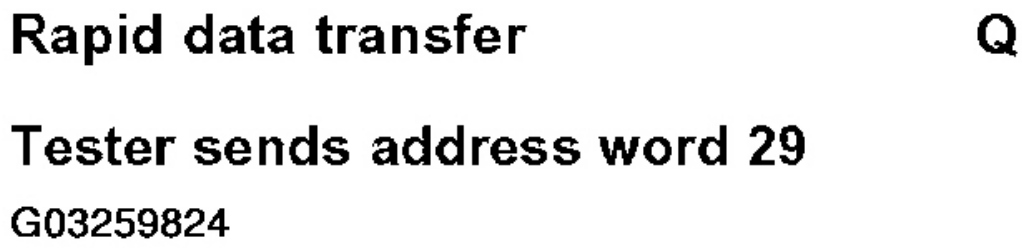



**Fig. 38: VAG 1551/1552 Scan Tool Display - Connecting VAG 1551/1552 Scan Tool (4 Of 9)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Control module version, checking**

Indicated on display

Upper line:

- Part No. of control module (Part and version numbers illustrated here are examples only.)
- System designation (headlight range control)
- Version number (Part and version numbers illustrated here are examples only.)

Bottom line:

- Coding number (Dependent on type of drive.)
- Dealership number
- Press --> key.

Indicated on display:

**Fig. 39: VAG 1551/1552 Scan Tool Display - Connecting VAG 1551/1552 Scan Tool (5 Of 9)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press keys -0- and -8- to select "Read measuring value block" address word 08.

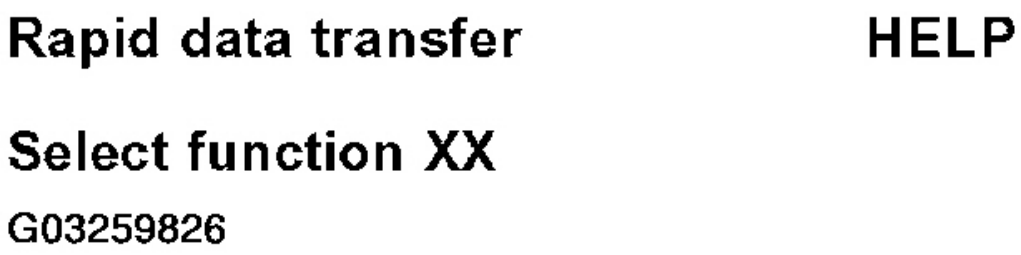



**Fig. 40: VAG 1551/1552 Scan Tool Display - Connecting VAG 1551/1552 Scan Tool (6 Of 9)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

Indicated on display:

- Press -Q- button to confirm input.

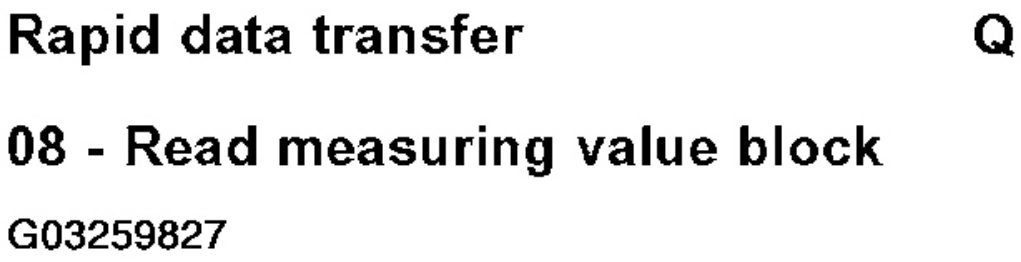



**Fig. 41: VAG 1551/1552 Scan Tool Display - Connecting VAG 1551/1552 Scan Tool (7 Of 9)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

Indicated on display.

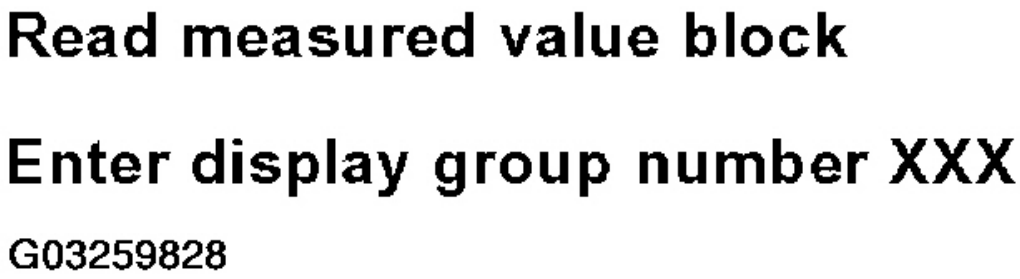



**Fig. 42: VAG 1551/1552 Scan Tool Display - Connecting VAG 1551/1552 Scan Tool (8 Of 9)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press key 0 twice and press key 2 once to select display group number 002.
- Press -Q- button to confirm input.

Indicated on display.

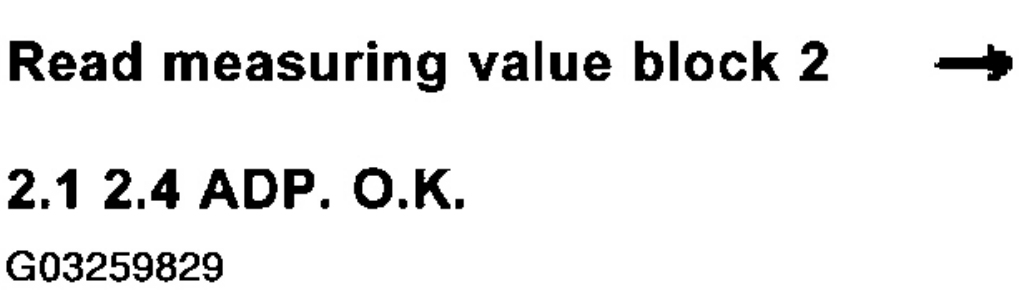



**Fig. 43: VAG 1551/1552 Scan Tool Display - Connecting VAG 1551/1552 Scan Tool (9 Of 9)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Loosen lower securing bolt -arrow- on coupling rod of front axle.
- Move coupling rod within elongated hole until specification of 1.0 to 2.0 Volt is displayed in display zone 1 of the Read measuring value block. Optimum specification = 1.0 Volt (if possible).
- Tighten securing bolt. When doing this ensure voltage remains as close to optimum tolerance of 1.0 Volt as possible.

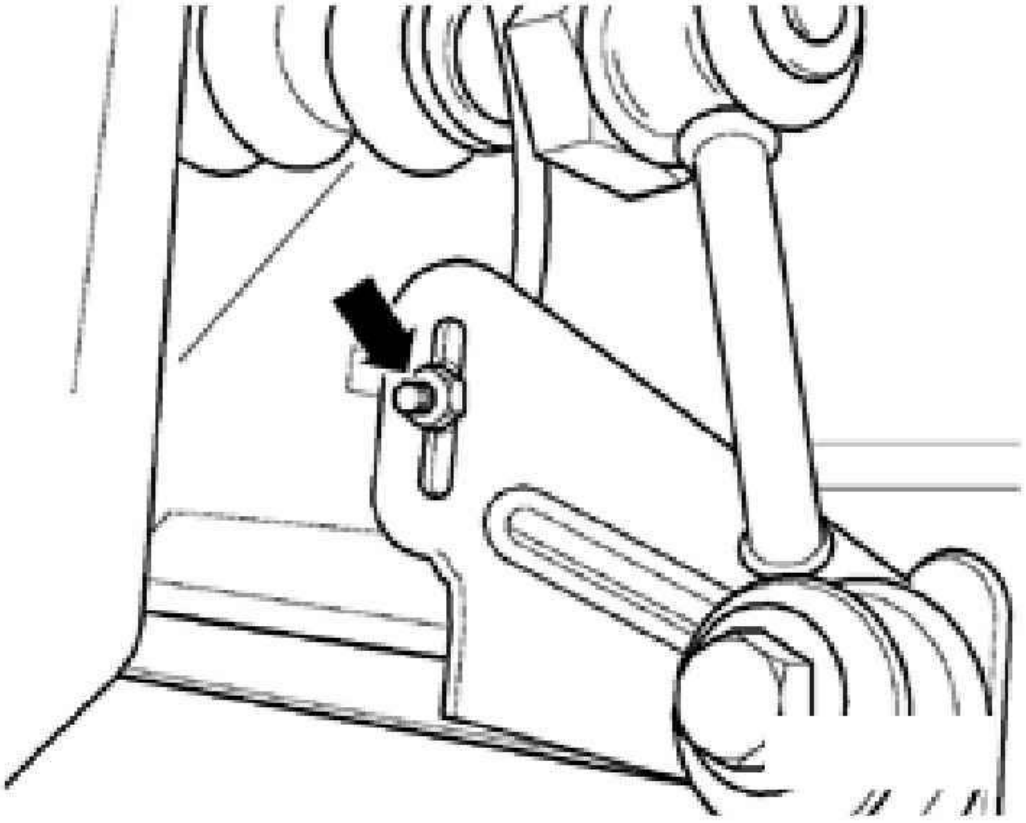



**Fig. 44: Tightening Lower Securing Bolt**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

Indicated on display after completion of adjustments.

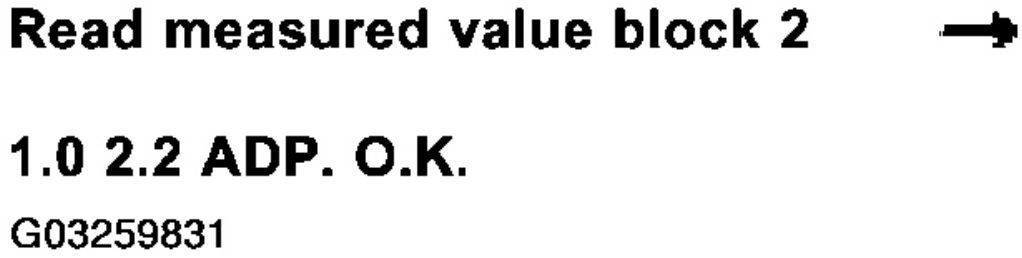



**Fig. 45: VAG 1551/1552 Scan Tool Display - Read Measuring Value Block**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press --> key.

Indicated on display.

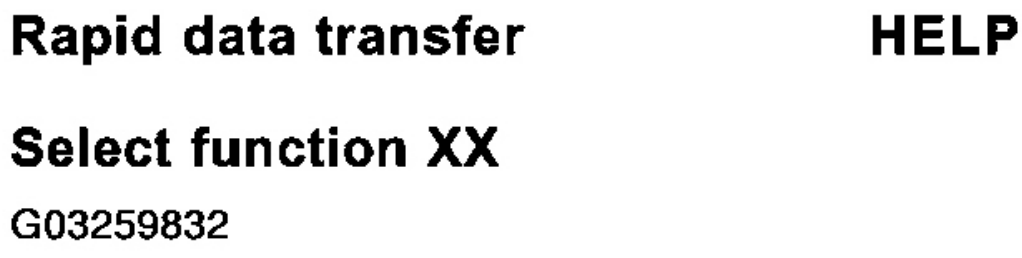



**Fig. 46: VAG 1551/1552 Scan Tool Display - Select Function XX**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press keys 0 and 6 to select "End output" function 06.

Indicated on display.

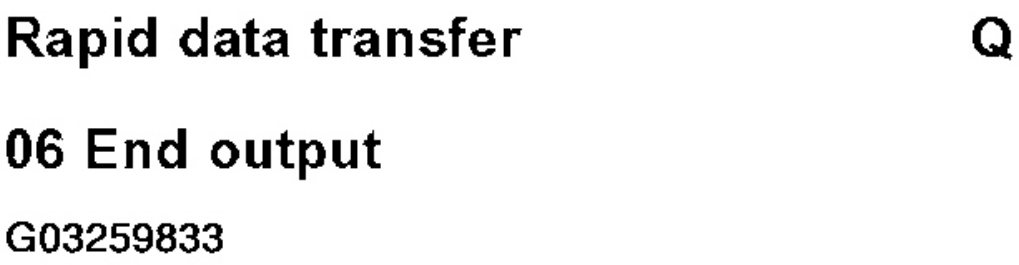



**Fig. 47: VAG 1551/1552 Scan Tool Display - End Output**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press -Q- button to confirm input.

Indicated on display.

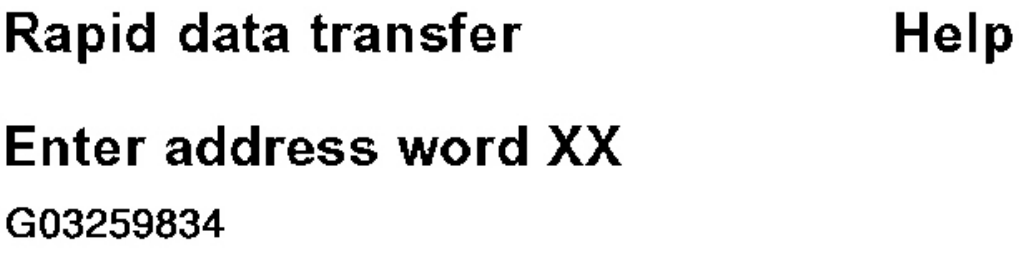



**Fig. 48: VAG 1551/1552 Scan Tool Display - Enter Address Word XX**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

After completing the mechanical adjustment of coupling rod, the related electrical components must adjusted to the revised settings. Perform basic settings of the automatic headlight range control to adjust to the revised settings.

See **On Board Diagnostic (OBD), function** .

**LEFT REAR LEVEL CONTROL SYSTEM SENSOR -G76-, REMOVING AND INSTALLING**

**Removing**

- Remove nuts -arrows-.

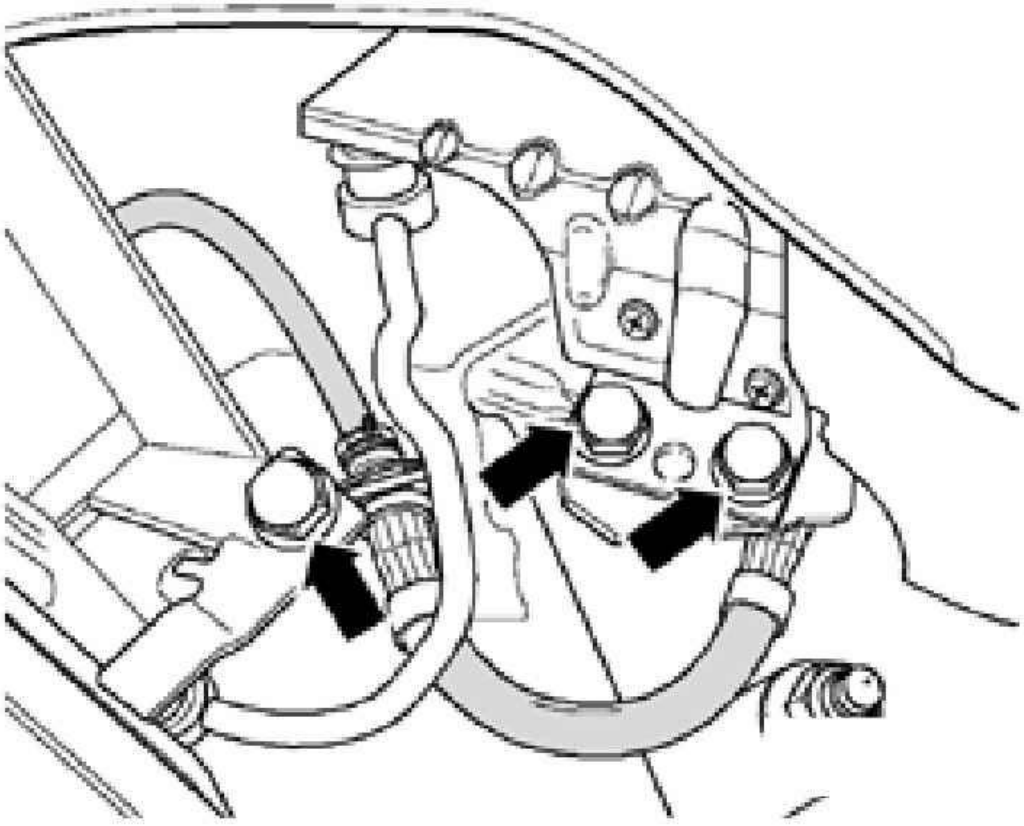



**Fig. 49: Removing Left Rear Level Control System Sensor Nuts**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove sensor with retainer.
- Disconnect electrical connections.

**Installing**

Installation in reverse sequence of removal.

When installing, ensure coupling rod angle bracket on rear axle is seated correctly.

**NOTE: The rear level control system sensor is not externally adjustable. However, it**

**must be checked after installation is complete.**

- Check rear level sensor adjustment, See **LEFT REAR LEVEL CONTROL SYSTEM SENSOR -G76-, CHECKING** .

**LEFT REAR LEVEL CONTROL SYSTEM SENSOR -G76-, CHECKING**

**NOTE: The rear level control system sensor is not externally adjustable. However, it must be checked after installation is complete,**

**Special tool, testers, and auxiliary items needed**

- VAG 1551/1552 Scan Tool (ST) or VAS 5051 Vehicle Diagnostic Testing and Information System tester.
- VAG 1551/3B Adapter Cable

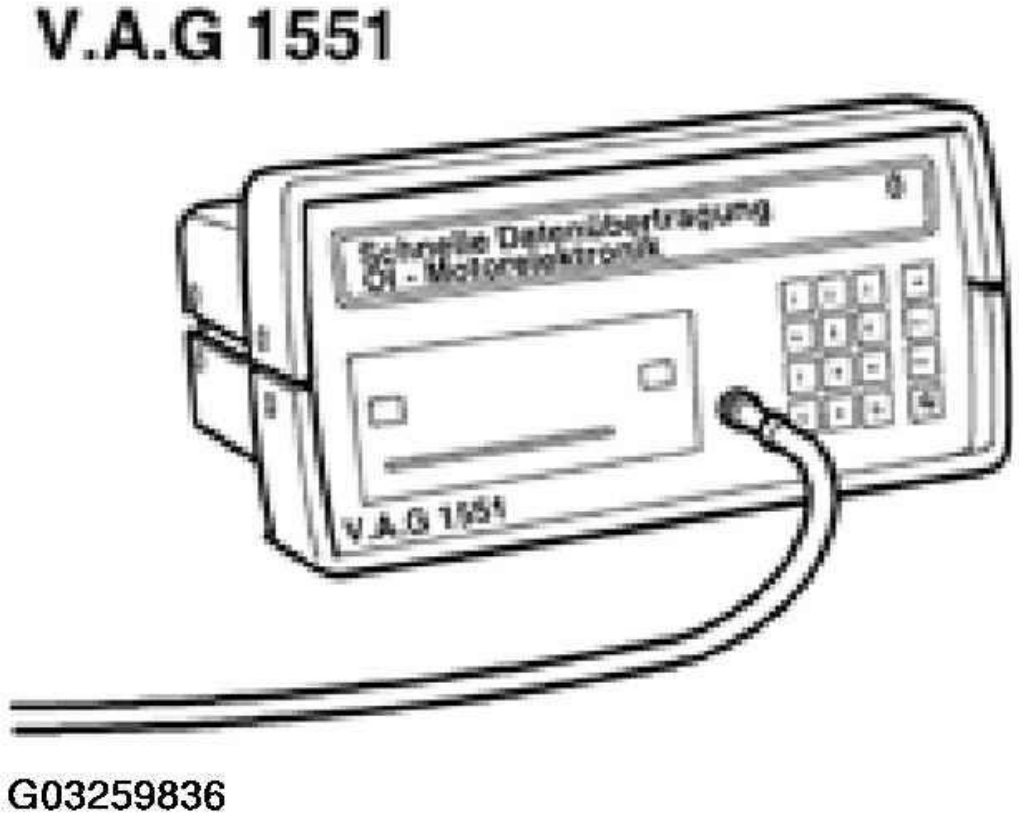



**Fig. 50: Identifying VAG 1551/1552 Scan Tool**

**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Prerequisites**

- Vehicle must be standing on all four wheels on a flat level surface.
- Handbrake lever must be in off position and a drive gear must not be selected.
- Steering must be in straight-ahead position.
- Vehicle must be unoccupied and not loaded.
- Vehicle must not be moved during basic settings process (i.e.: opening and closing of doors, people leaning on vehicle, people entering vehicle is not permitted).
- If vehicle was raised using a lifting platform/hoist or a vehicle/workshop jack, then it must be rolled back and forth several times so that the springs etc. settle, before starting adjustments.

**VAS 5051 Vehicle Diagnostic Testing and Information System or VAS 5052 Vehicle Diagnostic and Service System, selecting functions**

See **ON BOARD DIAGNOSTIC (OBD), FUNCTION** .

**VAG 1551/1552 Scan Tool (ST), connecting and selecting functions (function 01)**

Prerequisites:

- All fuses OK., according to wiring diagram
- Voltage supply OK. (minimum 9.0 V).
    - Connect Scan Tool (ST) using cable VAG 1551/3B.

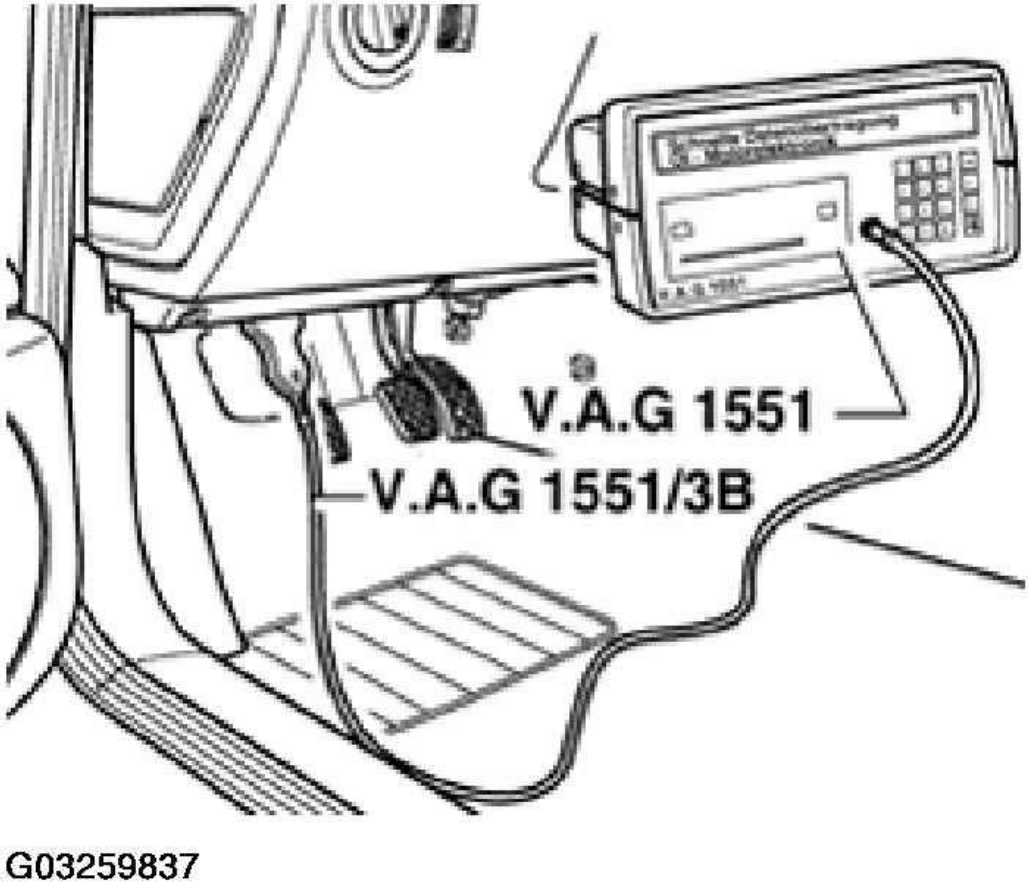



**Fig. 51: Connecting VAG 1551 Scan Tool**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

Indicated on display:

**Fig. 52: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (1 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

* Appears alternately

**NOTE:**

- **If display remains blank, check VAG 1551 voltage supply according to wiring diagram.**

  **See SYSTEM WIRING DIAGRAM article.**

- **Additional operating instructions can be called up with the scan tool HELP key.**
- **The --> key advances the program sequence.**
- **In operating mode 1 "Rapid data transfer" function 00 "Automatic test sequence" can be carried out. The DTC memory of all vehicle control units is checked automatically with function 00.**

- Switch ignition on.
- Switch printer on with the Print key (warning lamp in the key will light up).
- Press key 1 for "Rapid data transfer" operating mode.

Indicated on display:

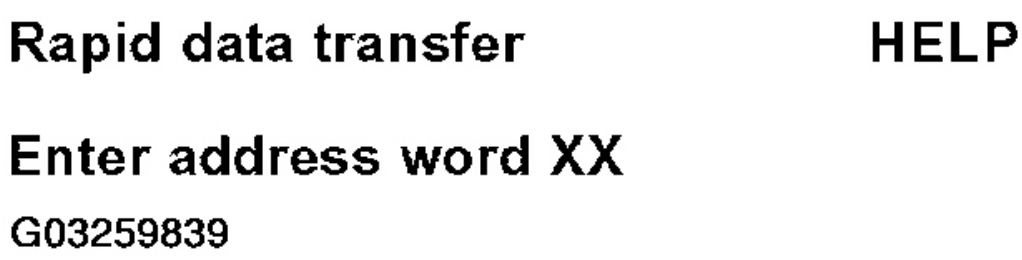



**Fig. 53: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (2 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press keys -2- and -9- to select "Light control, left" address word "29".

Indicated on display:

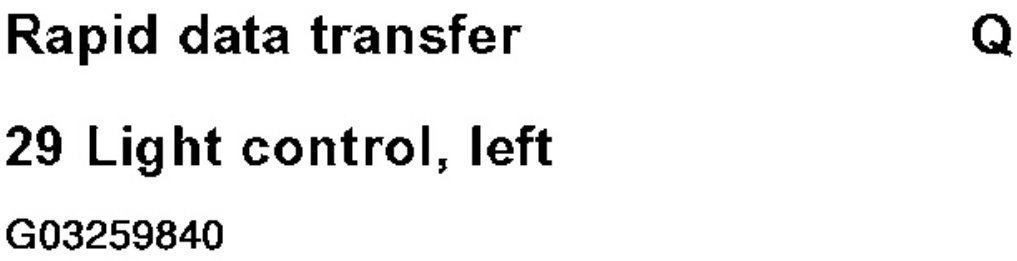



**Fig. 54: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (3 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press -Q- button to confirm input.

Indicated on display:

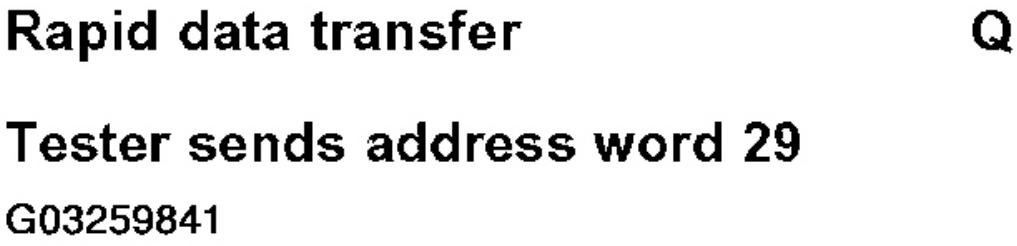



**Fig. 55: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (4 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Control module version, checking**

**Fig. 56: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (5 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

Indicated on display

Upper line:

- Part No. of control module (Part and version numbers illustrated here are examples only)
- System designation (headlight range control)
- Version number (Part and version numbers illustrated here are examples only)

Bottom line:

- Coding number (Dependent on type of drive.)
- Dealership number

- Press --> key.

Indicated on display:

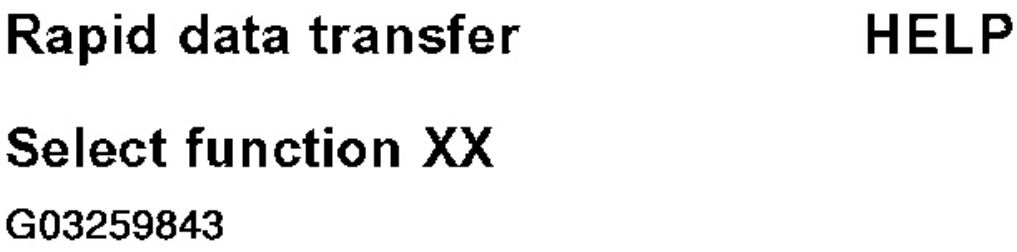



**Fig. 57: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (6 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press keys -0- and -8- to select "Read measuring value block" address word 08.

Indicated on display:

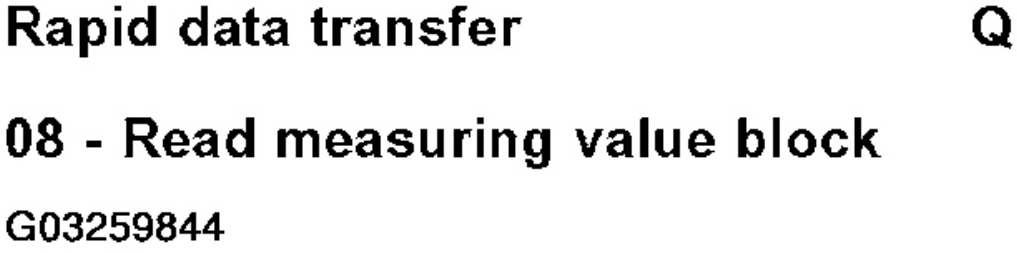



**Fig. 58: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (7 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press -Q- button to confirm input.

Indicated on display:

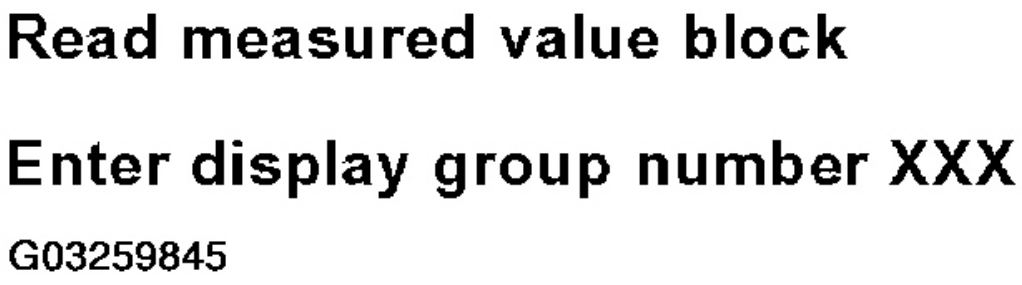



**Fig. 59: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (8 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press key 0 twice and press key 2 once to select display group number 002.
- Press -Q- button to confirm input.

Indicated on display:

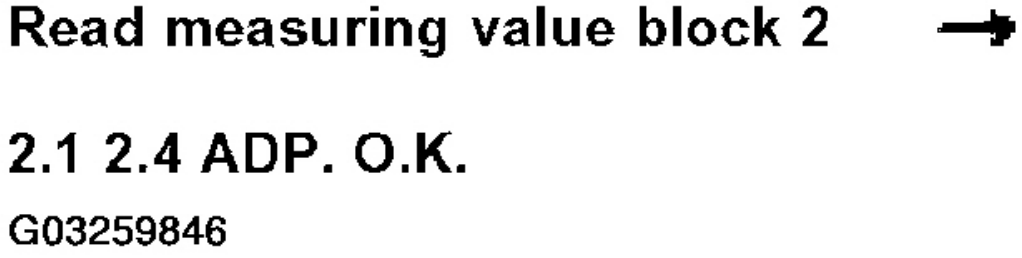



**Fig. 60: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (9 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**NOTE: Specification for rear level control system sensor, shown in display zone 2, must lie between 2.0 - 3.5 Volt.**

**NOTE: If voltage is outside specified tolerances, then check for the following:**

- **sensor is not loose in it's mounting.**

- **sensor coupling rod is not bent.**
- **electrical connections are correctly connected, free from corrosion and are locked in position.**

If malfunctions cannot be located in the above items, then perform troubleshooting using the Automatic Headlight Range Control On Board Diagnostic (OBD) program.

See **On Board Diagnostic (OBD), function** .

- Press --> key.

Indicated on display:

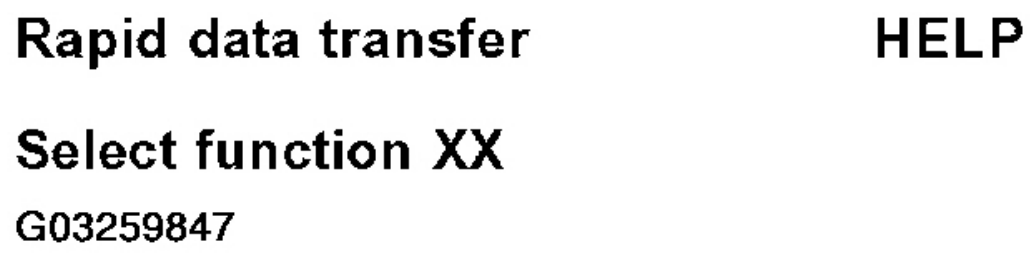



**Fig. 61: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (10 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press keys 0 and 6 to select "End output" function 06.

Indicated on display:

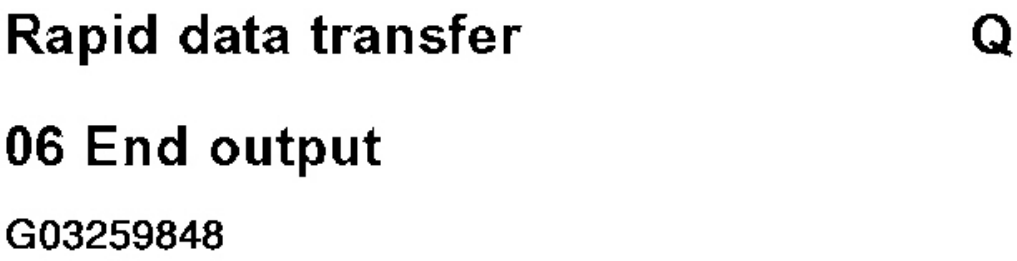



**Fig. 62: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (11 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Press -Q- button to confirm input.

Indicated on display:

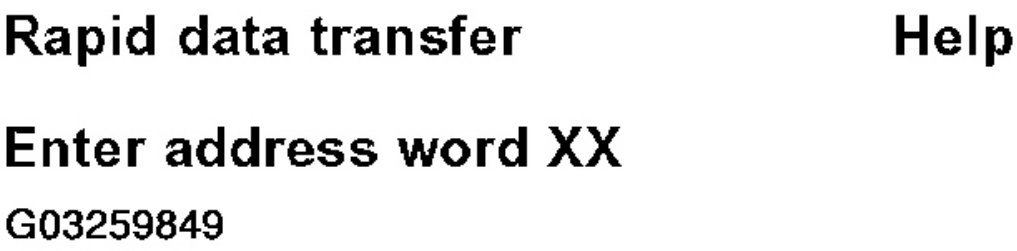



**Fig. 63: VAG 1551/1552 Scan Tool Display - Left Rear Level Control System Sensor -G76 (12 Of 12)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

After checking the adjustment of the coupling rod, the related electrical components must adjusted to the revised settings. Perform basic settings of the automatic headlight range control to adjust to the revised settings.

See **On Board Diagnostic (OBD), function** .

**HEADLIGHT BEAM ADJUSTING MOTOR -V48- / -V49-, REMOVING AND INSTALLING**

**Removing**

- Remove headlight housing. See **HEADLIGHT HOUSING WITH HIGH INTENSITY GAS**

**DISCHARGE (HID) LAMP, REMOVING AND INSTALLING** .

- Remove sealing cap. See **HEADLIGHTS WITH HIGH INTENSITY GAS DISCHARGE (HID) LAMP, REPLACING BULBS** .
- Remove screws -arrows- on motor.

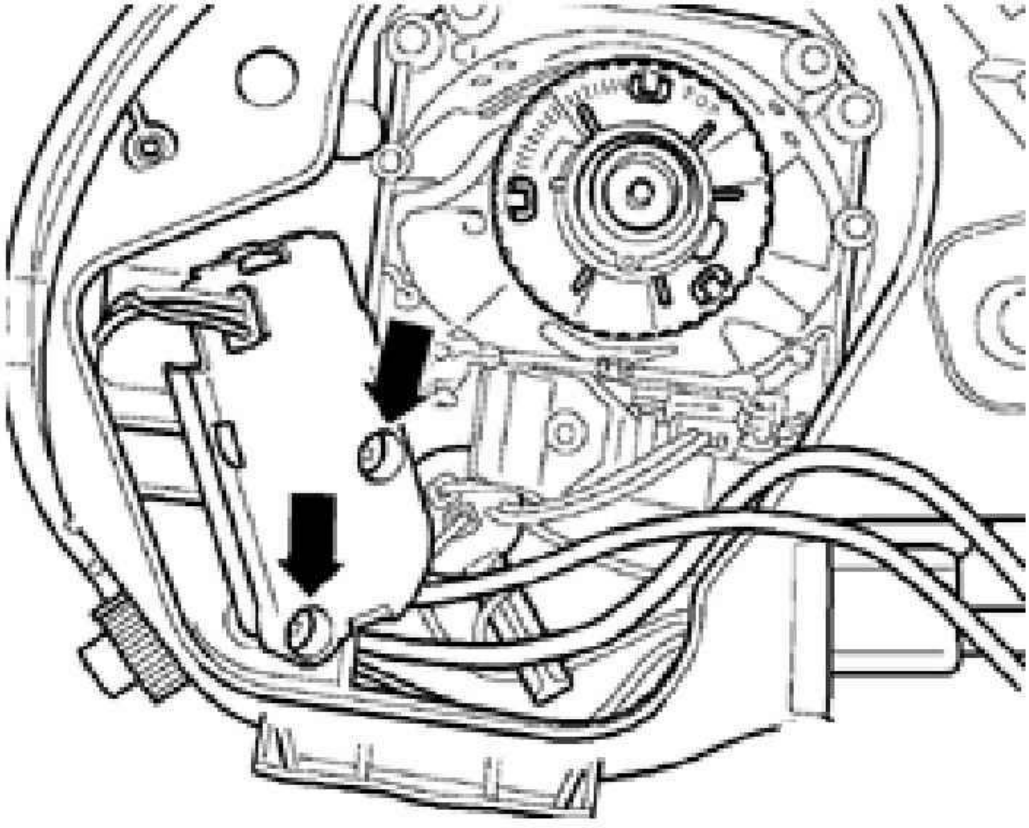



**Fig. 64: Removing Headlight Beam Adjusting Motor Screws**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Pull positioning rod ball head out from locking device on reflector.
- Disconnect electrical connection.

**Installing**

Installation in reverse sequence or removal.

- Check headlight function.
- Perform headlight basic setting (function 04) using On Board Diagnostic program, See **ON BOARD DIAGNOSTIC (OBD), FUNCTION** .

## FRONT TURN SIGNAL AND SIDE MARKER LIGHTS

### FRONT TURN SIGNAL AND SIDE MARKER LIGHTS, REMOVING AND INSTALLING

**CAUTION:**
- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Remove screw cover.

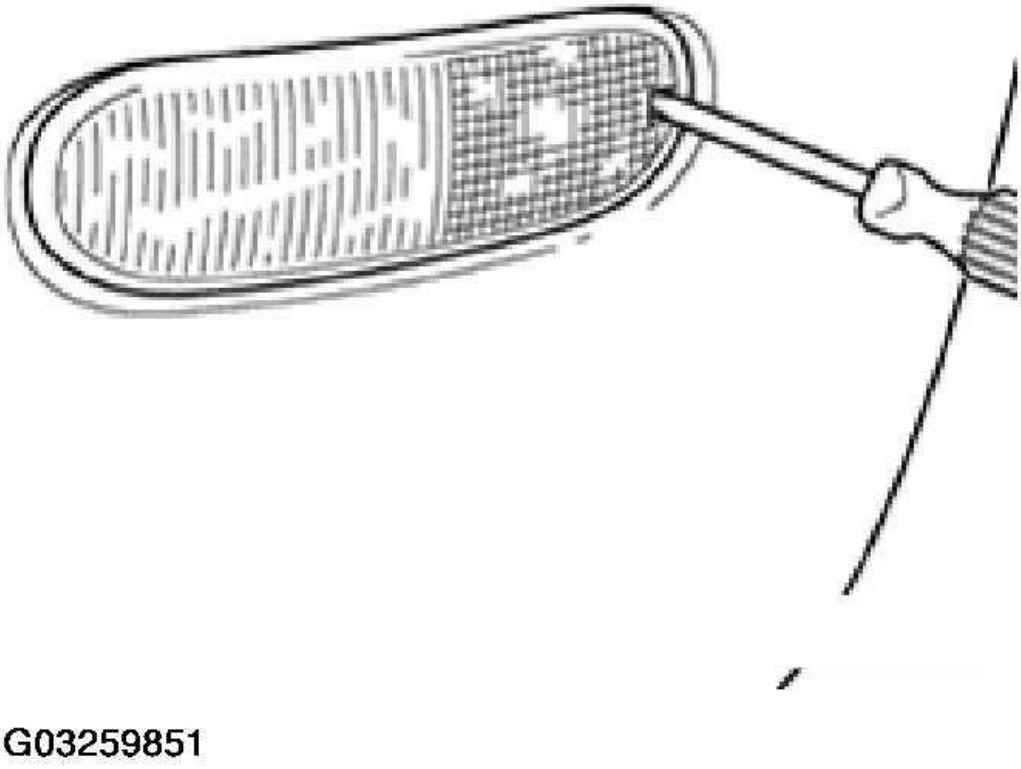



**Fig. 65: Removing Front Turn Signal And Side Marker Lights Screw Cover**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove securing screw.
- Pull turn signal out forwards.
- Disconnect electrical connector.

**Installing**

- Connect electrical connector.
- Slide turn signal into fender opening.

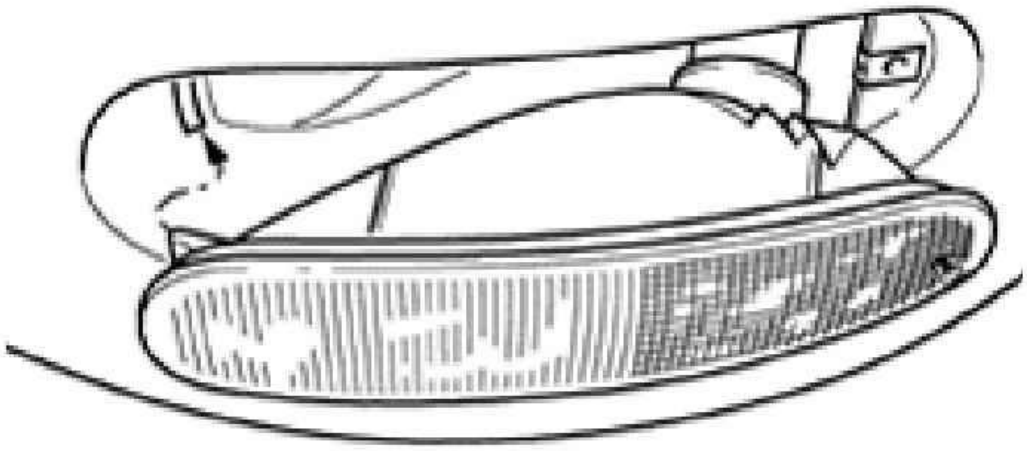



**Fig. 66: Sliding Turn Signal Into Fender Opening**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

## FRONT TURN SIGNAL AND SIDE MARKER LIGHT BULB, REPLACING

**Removing**

- Remove turn signal lights and side marker lights. See **FRONT TURN SIGNAL AND SIDE MARKER LIGHTS** .
- Turn bulb holder in direction shown -arrow- and pull out from housing.
- Remove bulb from holder.

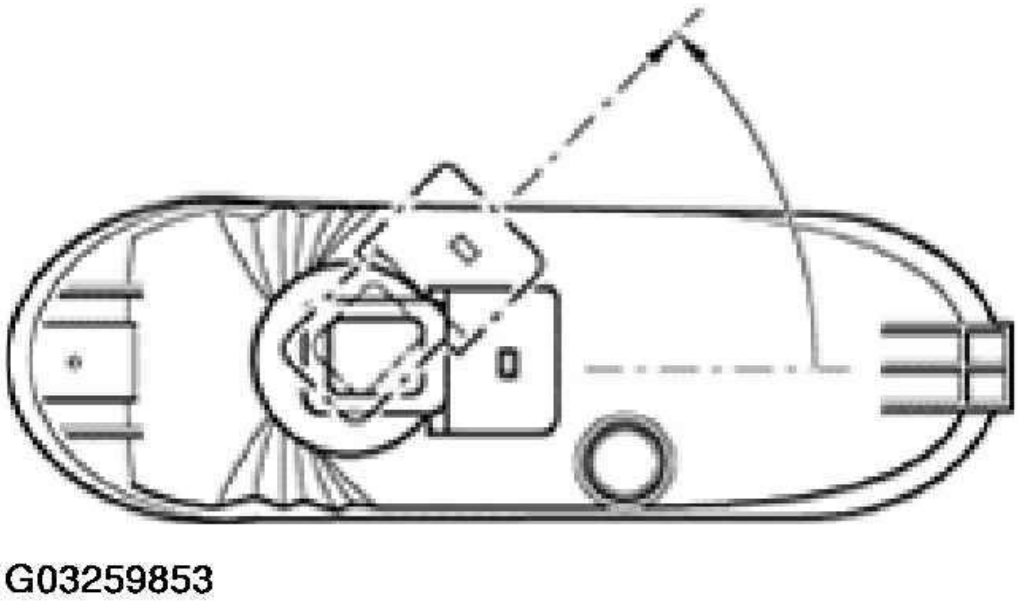



**Fig. 67: Removing Bulb From Holder**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Installing**

**CAUTION: Do not touch the glass portion of the bulb with bare hands. The moisture and/or grease from fingers that evaporates on the bulb during operation, can cause the glass to cloud over.**

- Install in reverse order of removal.
- When installing, make sure bulb holder engages in housing by turning in opposite direction to direction shown -arrow-.

## FRONT TURN SIGNAL AND SIDE MARKER LIGHTS (TURBO S MODELS ONLY)

### FRONT TURN SIGNAL LIGHTS, REMOVING AND INSTALLING

**Removing**

- Bring lock carrier into service position

  See **LOCK CARRIER, MOVING TO SERVICE POSITION** .

- Disconnect electrical connection to turn signal housing.
- Remove screw -1- and swing turn signal housing -2- out of mounting.

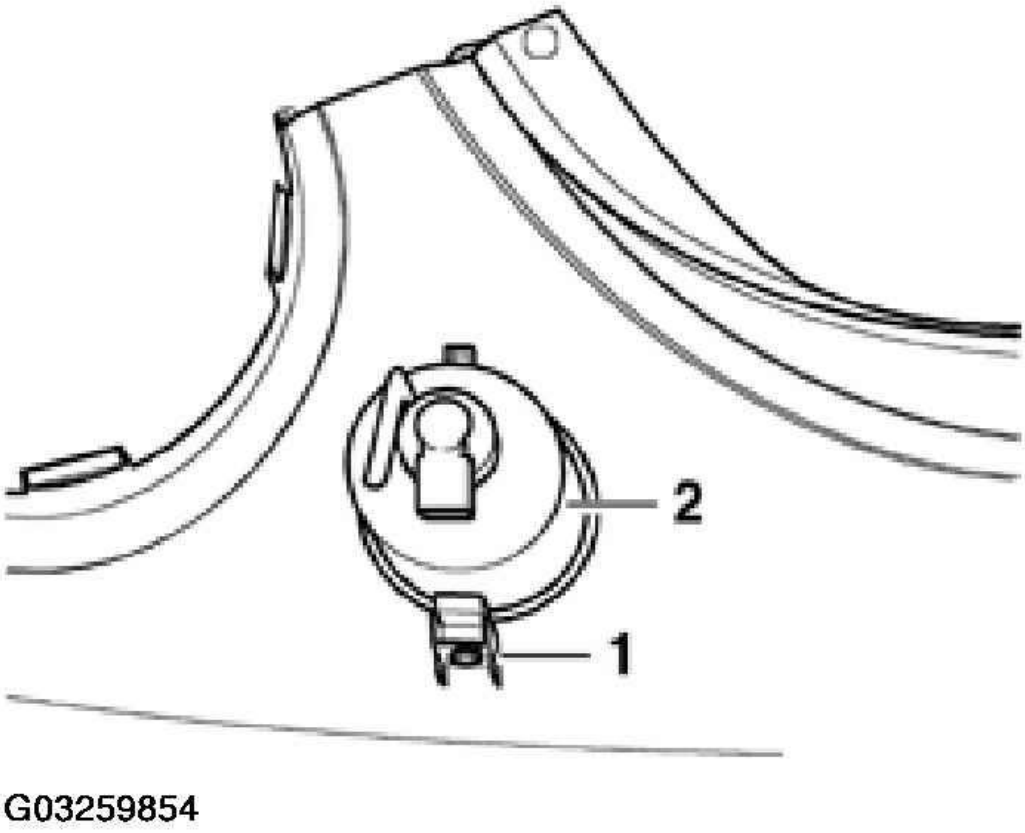



**Fig. 68: Removing Screw And Swing Turn Signal Housing**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

#### Installing

Install in reverse order of removal.

### FRONT TURN SIGNAL BULB, REPLACING

#### Removing

- Remove front turn signal. See **FRONT TURN SIGNAL AND SIDE MARKER LIGHTS (TURBO S MODELS ONLY)** .
- Turn bulb holder and pull out from housing as follows:

Left light: turn bulb holder counterclockwise

Right light: turn bulb holder clockwise.

- Remove bulb from bulb holder.

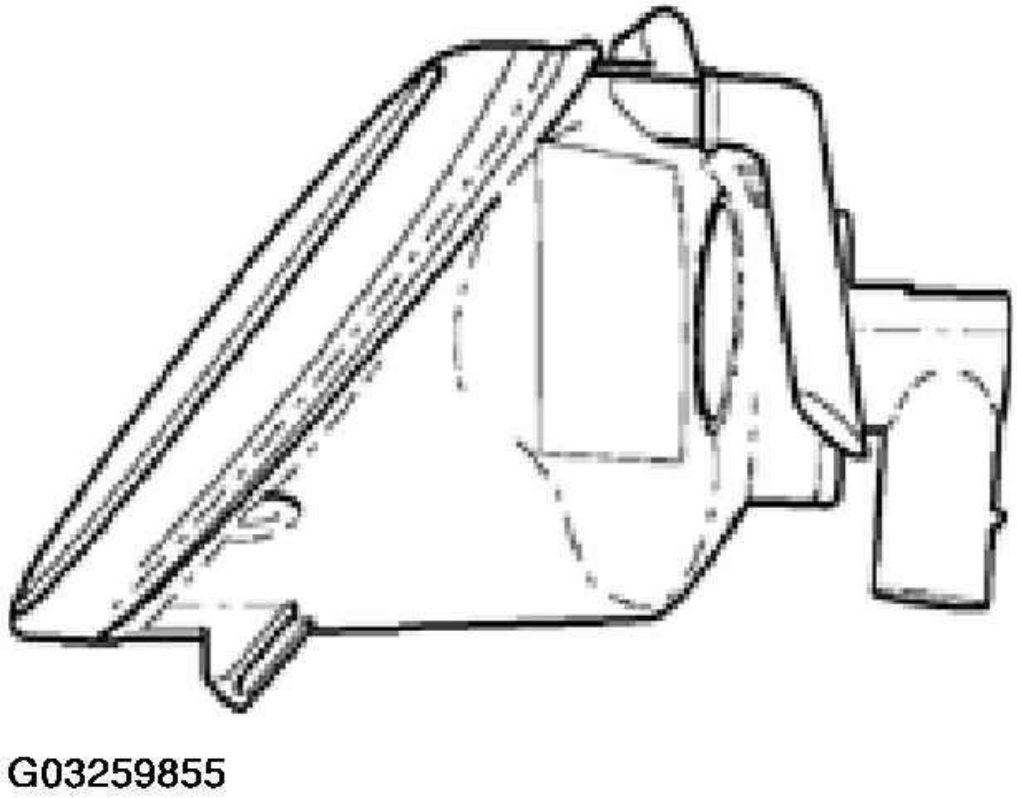



**Fig. 69: Removing Front Turn Signal Bulb From Holder**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Installing**

**CAUTION: Do not touch the glass portion of the bulb with bare hands. The moisture and/or grease from fingers that evaporates on the bulb during operation, can cause the glass to cloud over.**

- Install in reverse order of removal.

**NOTE:** **When installing, ensure bulb holder engages fully in housing, and turn in opposite direction of removal.**

## FRONT SIDE MARKER LIGHTS, REMOVING AND INSTALLING

**CAUTION:**
- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

### Removing

- Remove front inner fender liner

  See **WHEEL HOUSING LINER** .

- Carefully press retainer clip in direction of -arrow-.

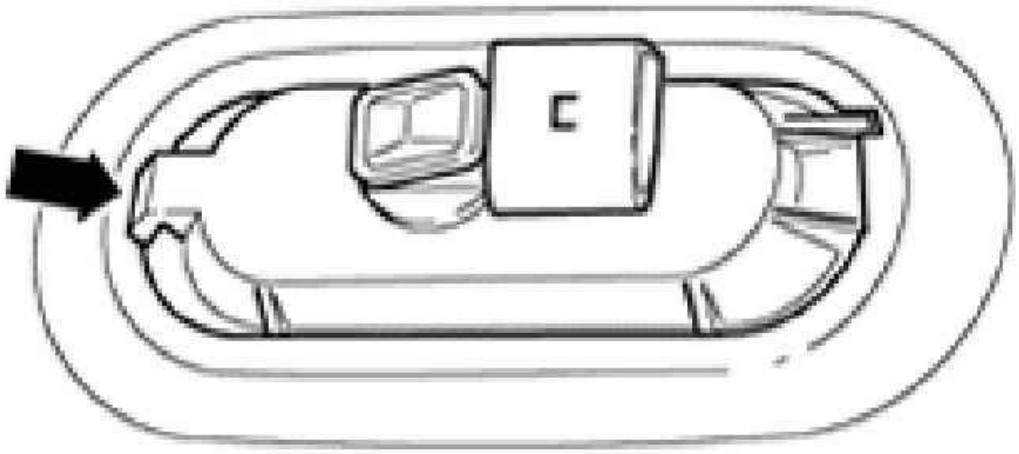



**Fig. 70: Removing Front Side Marker Light Retainer Clip**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Disconnect electrical connection.

### Installing

- Reconnect electrical connection.

- Insert side marker light into bumper and click in place, make sure locating boss is seated correctly in cutout -arrow-

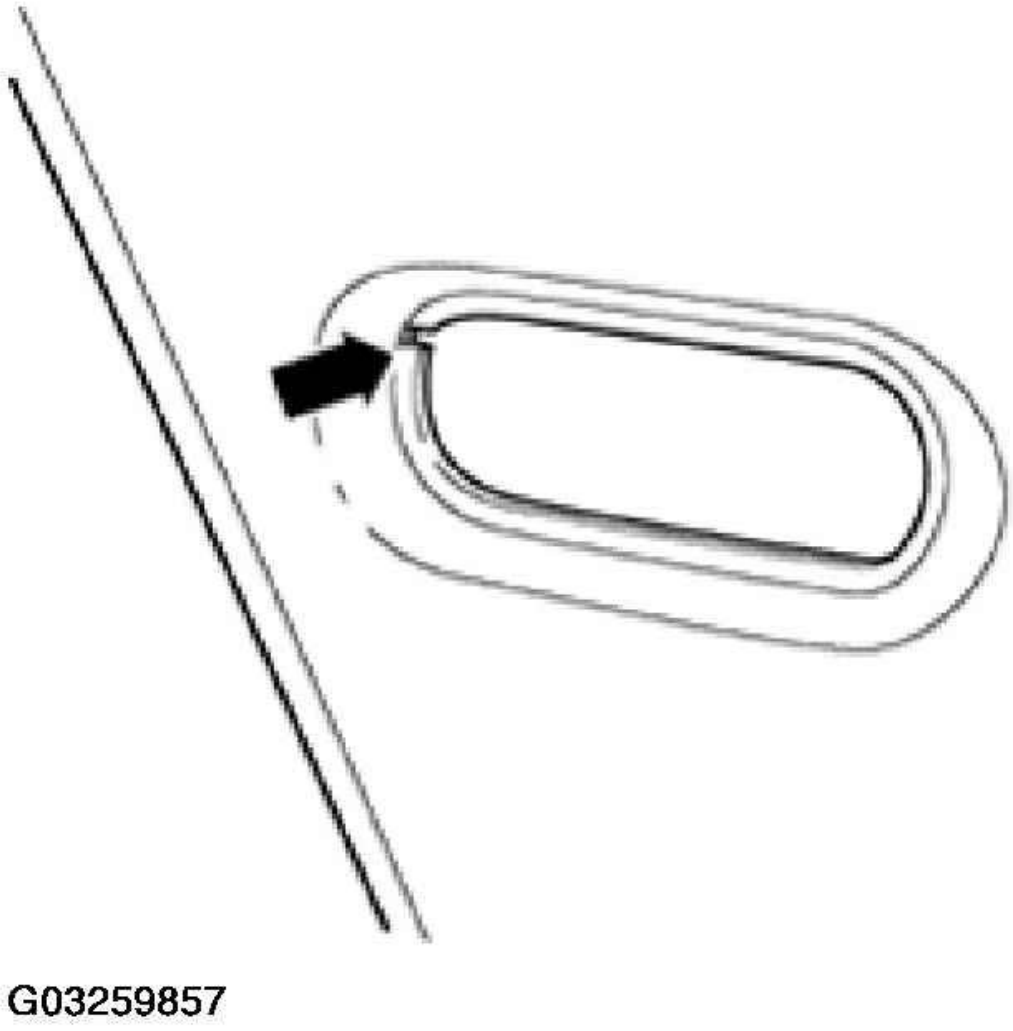



**Fig. 71: Inserting Side Marker Light Into Bumper**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**FRONT SIDE MARKER LIGHT BULB, REPLACING**

**CAUTION:**
- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Remove front inner fender liner.

  See **WHEEL HOUSING LINER** .

- Turn bulb holder in direction of -arrow- and pull out from housing.

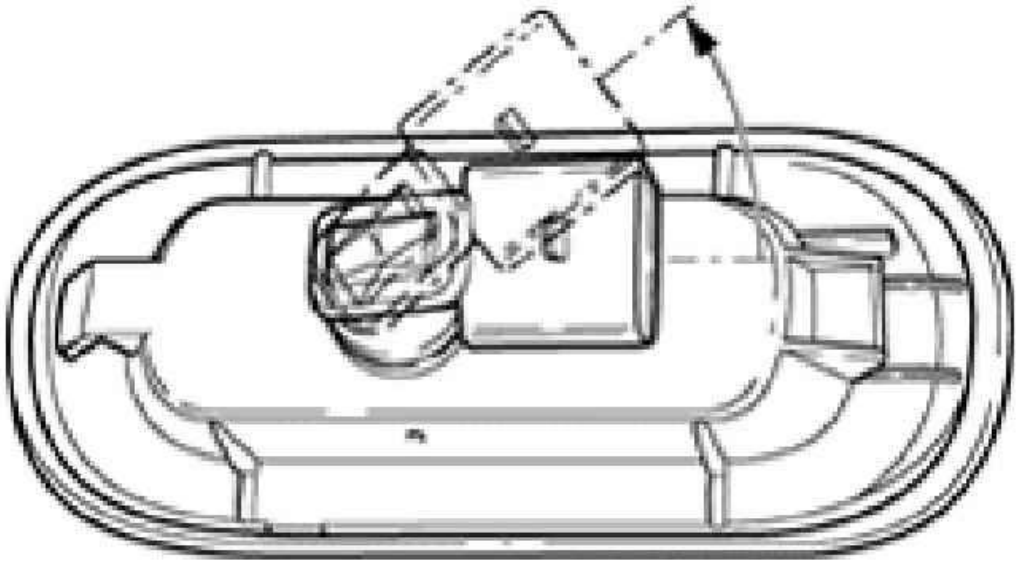



**Fig. 72: Removing Front Side Marker Light Bulb**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Pull out bulb, do not turn.

**Installing**

**CAUTION: Do not touch the glass portion of the bulb with bare hands. The moisture and/or grease from fingers that evaporates on the bulb during operation, can cause the glass to cloud over.**

- Install in reverse order of removal.

**NOTE: When installing, ensure bulb holder engages fully in housing, and turn in**

**opposite direction of removal.**

# SIDE MOUNTED TURN SIGNALS

### SIDE MOUNTED TURN SIGNALS IN FRONT QUARTER PANELS, REMOVING AND INSTALLING

**NOTE:**

- **New Beetle Sedan from 06.99 through m.y. 2003 have side mounted turn signals mounted in the front quarter panels.**
- **Side mounted turn signals can only be removed from the vehicle interior.**
- **Light emitting diodes (LED) with a long service life are installed in the side mounted turn signals, instead of normal bulbs.**
- **The complete turn signal must be replaced if damaged.**

**Removing**

**CAUTION:**

- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

- Remove inner plenum panel cover:

  See **PLENUM CHAMBER INNER COVER, REMOVING AND INSTALLING** .

- Remove dust and pollen filter (right-hand side only)

  See **CABIN AIR FILTER** .

- Pull rubber grommet -3- off.

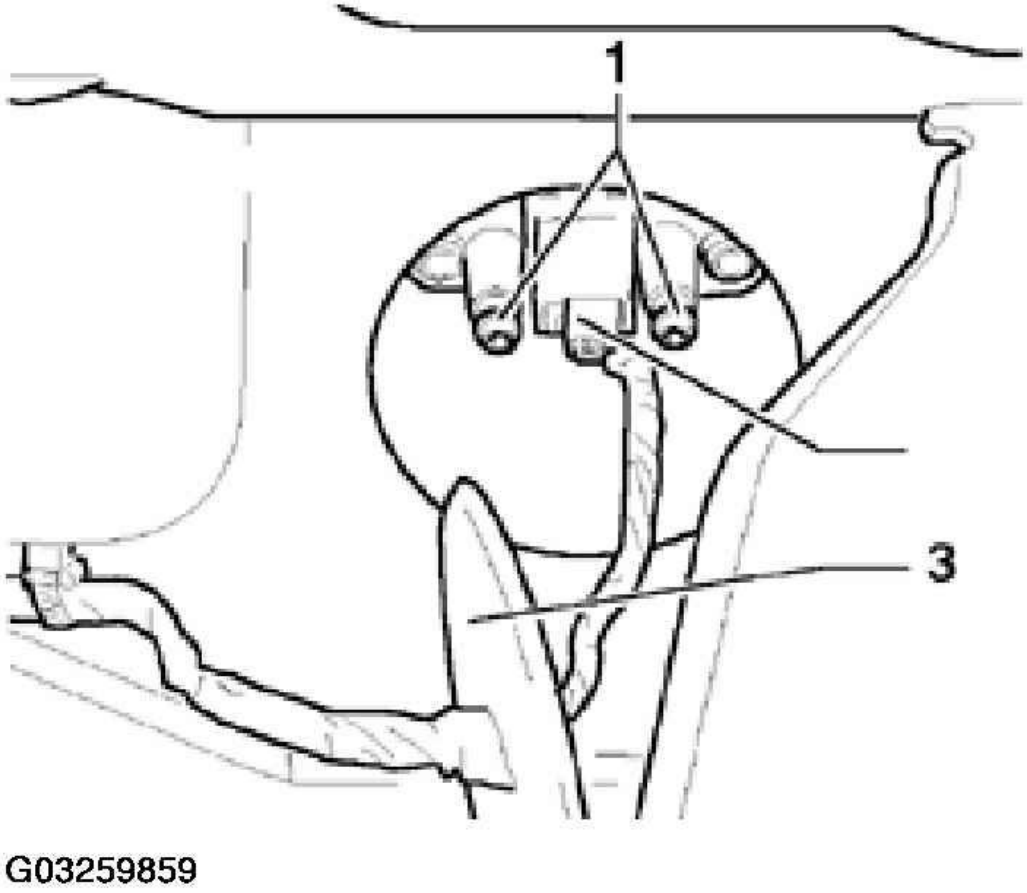



**Fig. 73: Removing Side Mounted Turn Signals In Front Quarter Panels**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Disconnect electrical connector.
- Remove screws -1- (screws are secured against falling out).
- Pull side mounted turn signal out outwards.

**Installing**

Install in reverse order of removal.

**SIDE MOUNTED TURN SIGNALS IN REAR VIEW MIRROR HOUSING, REMOVING AND INSTALLING**

**NOTE: New Beetle Convertible from m.y 2003 and Sedan from m.y 2004 have side**

**mounted turn signals -1- integrated to mirror housing.**

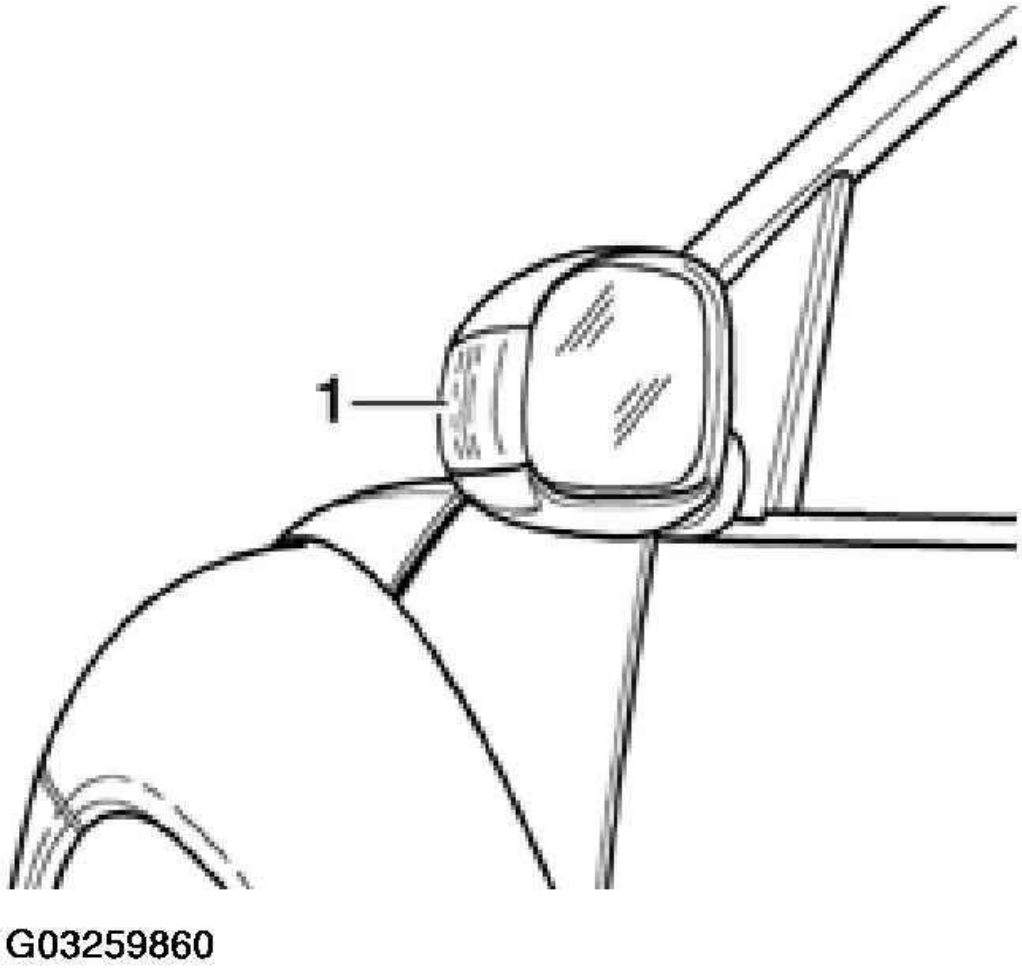



**Fig. 74: Side Mounted Turn Signals -1- Integrated To Mirror Housing**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**CAUTION:**
- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Remove mirror housing

See **MIRROR HOUSING, REMOVING AND INSTALLING** .

- Remove screw -1-.

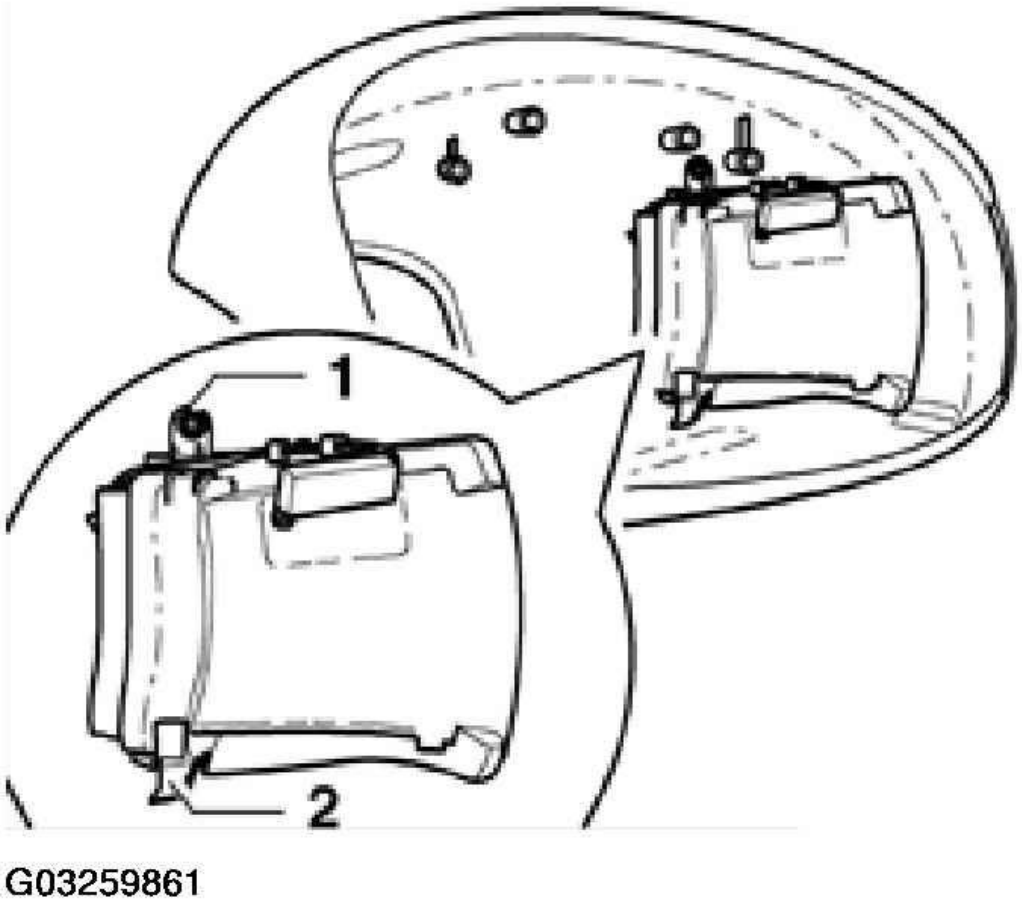



**Fig. 75: Removing Side Mounted Turn Signals In Rear View Mirror Housing**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Unlock securing latch -2- manually by pushing it gently upwards.
- Remove turn signal by pushing it in towards the mirror housing.

**Installing**

Install in reverse order of removal.

**NOTE: In case of damaged mirror housing and/or turn signals, both can be found as**

**separate spare parts.**

# REAR LIGHTS

## REAR LIGHTS, ASSEMBLY

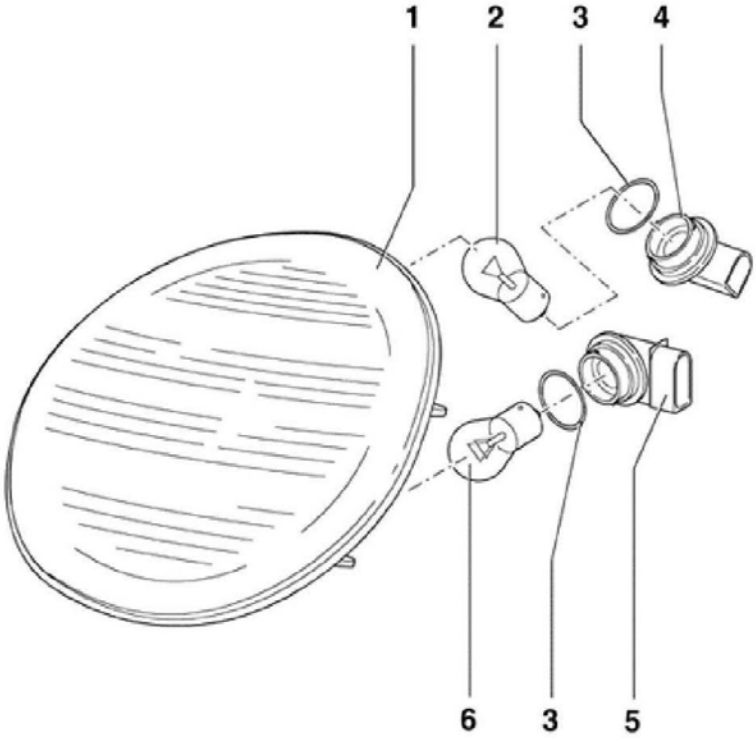
**NOTE: The following list refers to items in Fig. 76 .**

1. **Housing**
   - Replace if gasket is faulty
   - Removing and installing. See **REAR LIGHT HOUSING, REMOVING AND INSTALLING** .
2. **Turn signal bulb**

   12V/21W

3. **O-ring**
   - Replace if damaged
4. **Bulb holder for turn signal**
   - Removing and installing. See **REAR LIGHT BULBS, REPLACING** .
5. **Bulb holder for brake light and taillight**
   - Removing and installing. See **REAR LIGHT BULBS, REPLACING** .
6. **Dual filament bulb for brake light and taillight**

   12V/21W/5W




1 - Housing

2 - Turn signal bulb

3 - O-ring

4 - Bulb holder for turn signal

5 - Bulb holder for brake light and taillight

6 - Dual filament bulb for brake light and taillight

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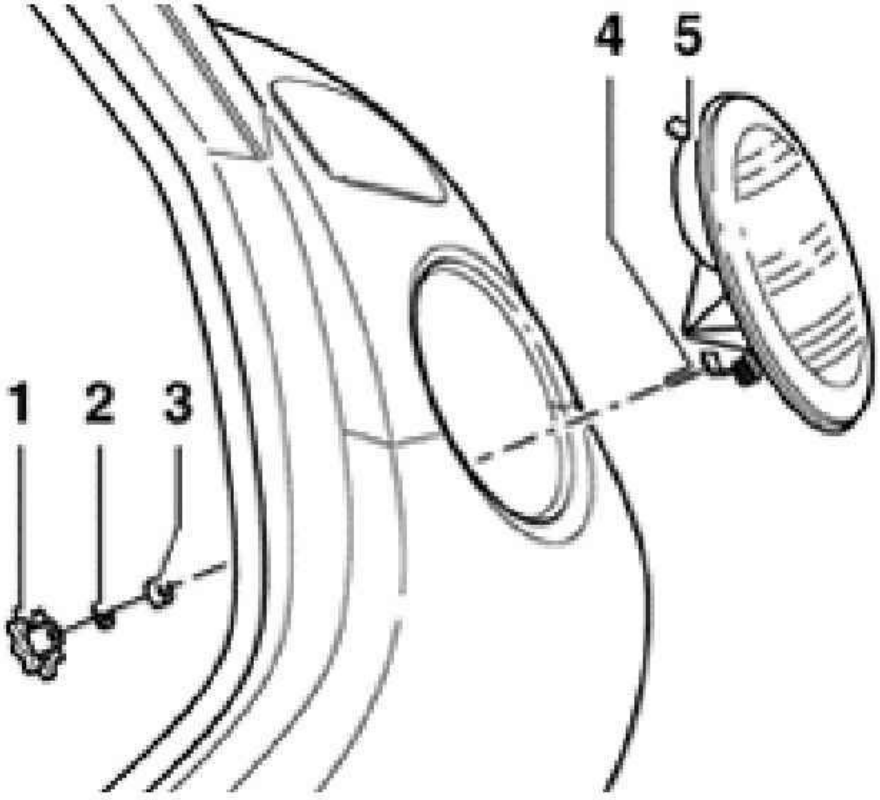
**Fig. 76: Identifying Rear Light Assembly**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**REAR LIGHT HOUSING, REMOVING AND INSTALLING**

**Removing**

**NOTE: The following list refers to items in Fig. 77 .**

1. Knurled nut
2. Washer
3. Spacer
4. Retaining bolt
5. Rear light




1 - Knurled nut

2 - Washer

3 - Spacer

4 - Retaining bolt

5 - Rear light

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**Fig. 77: Rear Light Housing**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**CAUTION:**
- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

- Remove rear striker mount cover.

  See **LOAD AND LUGGAGE AREA TRIMS** .

- Reach behind respective quarter panel trim and unscrew knurled nut -1-. Make sure washer -2- and spacer -3- do not fall down. See **Fig. 77** .
- Remove rear light -5- and disconnect electrical connector.

**Installing**

- Connect electrical connector.
- Insert rear light housing into body opening.
- Insert retaining bolt -4- into body opening.
- Insert rear light into cutout -arrow-.

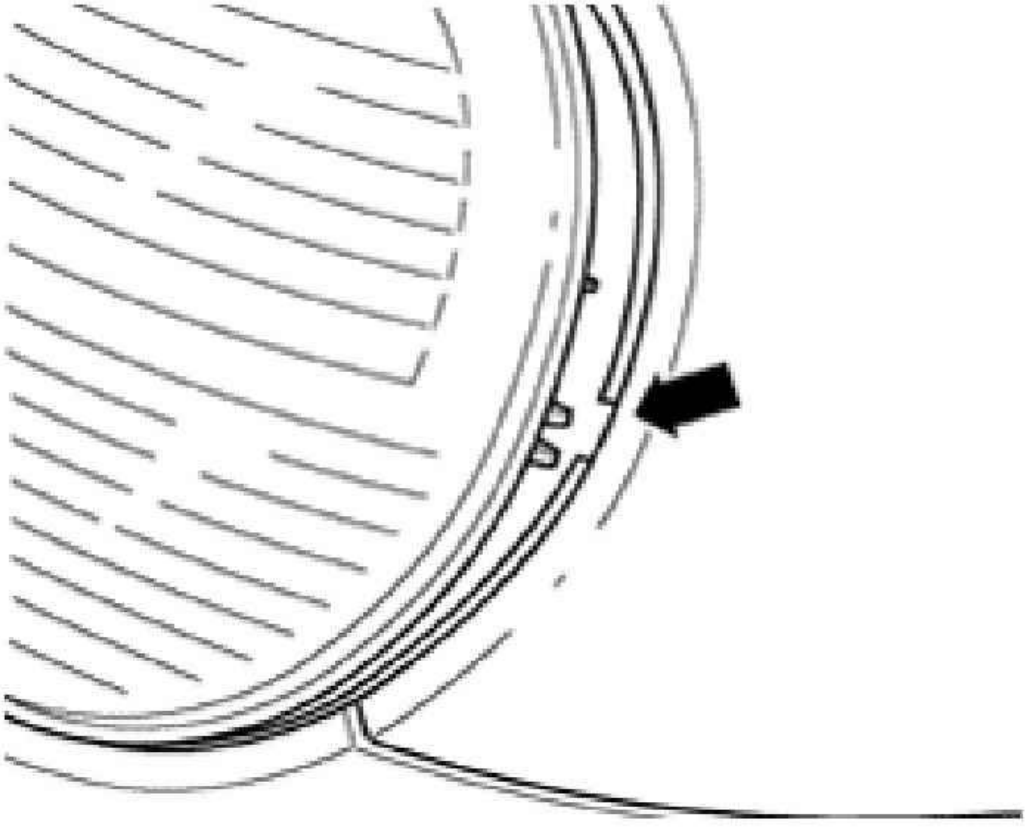



**Fig. 78: Inserting Rear Light Into Cutout**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Slide spacer -3- and washer -2- onto retaining bolt -4-, attach knurled nut -1- and tighten by hand.

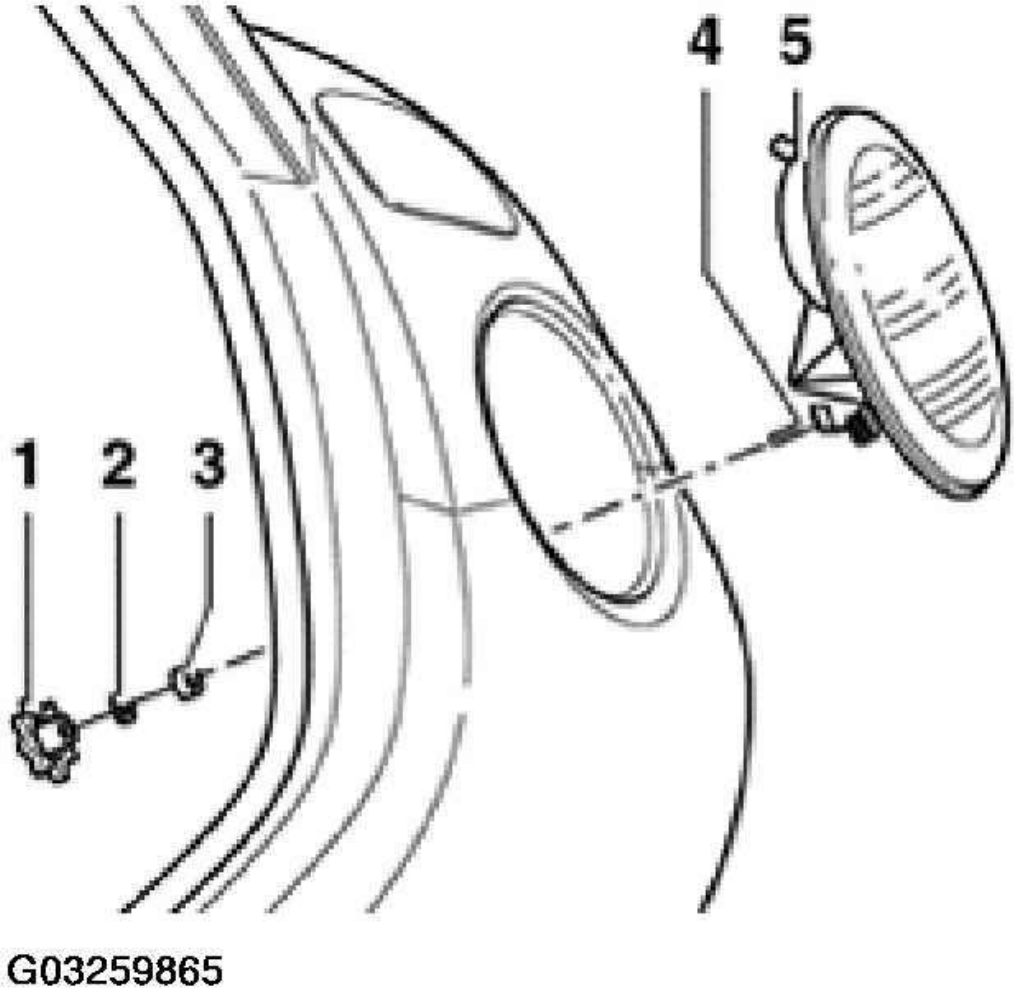



**Fig. 79: Installing Spacer And Washer Onto Retaining Bolt**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**REAR LIGHT BULBS, REPLACING**

The procedure for removing and installing turn signal light bulbs is the same as that for brake light and taillight bulbs.

Only the procedure for brake light and taillight bulbs is described here.

**Removing**

- Remove rear light. See **REAR LIGHT HOUSING, REMOVING AND INSTALLING** .

- Turn bulb holder in direction shown -arrow- and remove from housing.
- Remove bulb from holder.

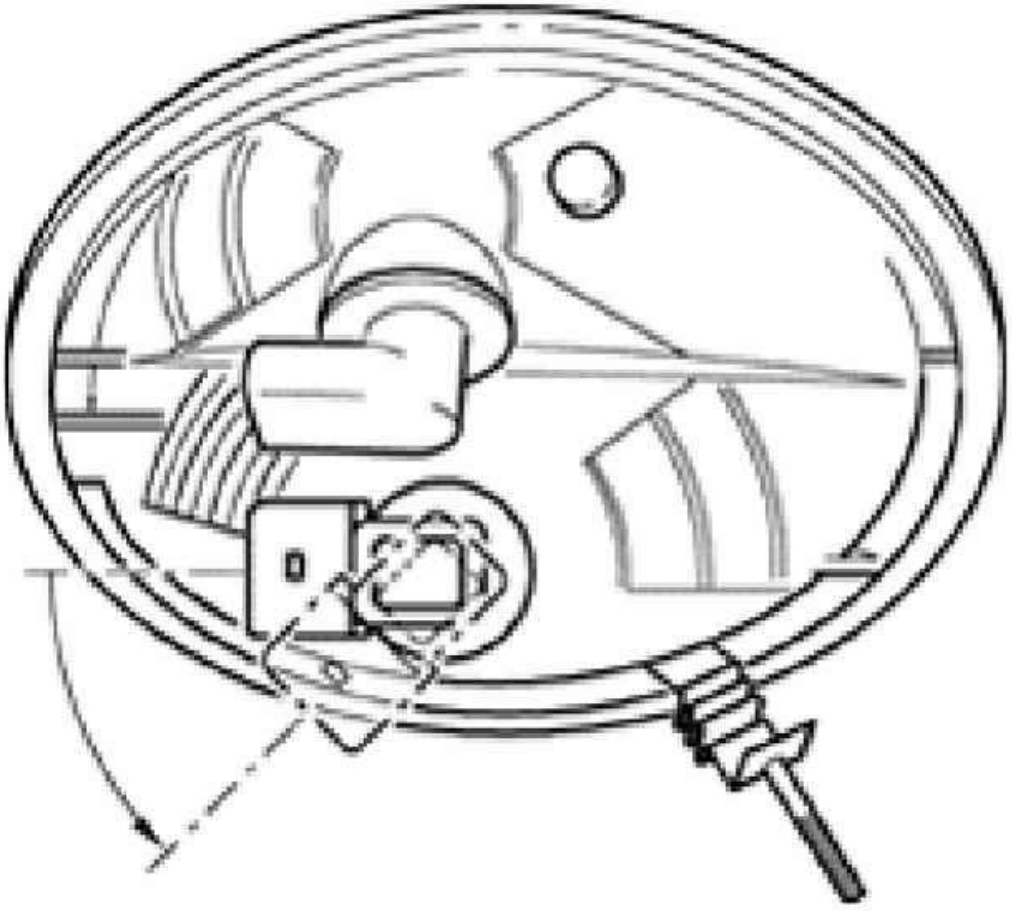



**Fig. 80: Removing Rear Light Bulb From Holder**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Installing**

**CAUTION: Do not touch the glass portion of the bulb with bare hands. The moisture and/or grease from fingers that evaporates on the bulb during operation, can cause the glass to cloud over.**

- Install in reverse order of removal.
- When installing, make sure bulb holder engages in housing by turning in opposite direction shown -arrow-.

**REAR SIDE MARKER LIGHTS, REMOVING AND INSTALLING**

**CAUTION:**
- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Remove rear inner fender liner.

  See **REAR WHEEL HOUSINGS LINER, ASSEMBLY OVERVIEW** .

- On inner side of bumper, carefully press retainer clip in direction shown -arrow-.

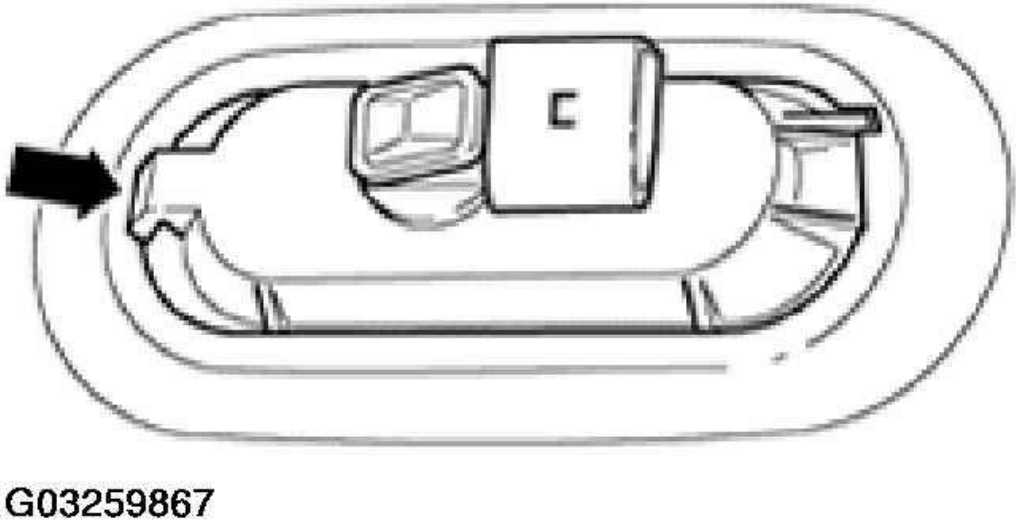



**Fig. 81: Removing Rear Side Marker Light Retainer Clip**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Disconnect electrical connector.

**Installing**

- Connect electrical connector.
- Insert side marker light into bumper and click in place, make sure locating boss is seated correctly in cutout -arrow-.

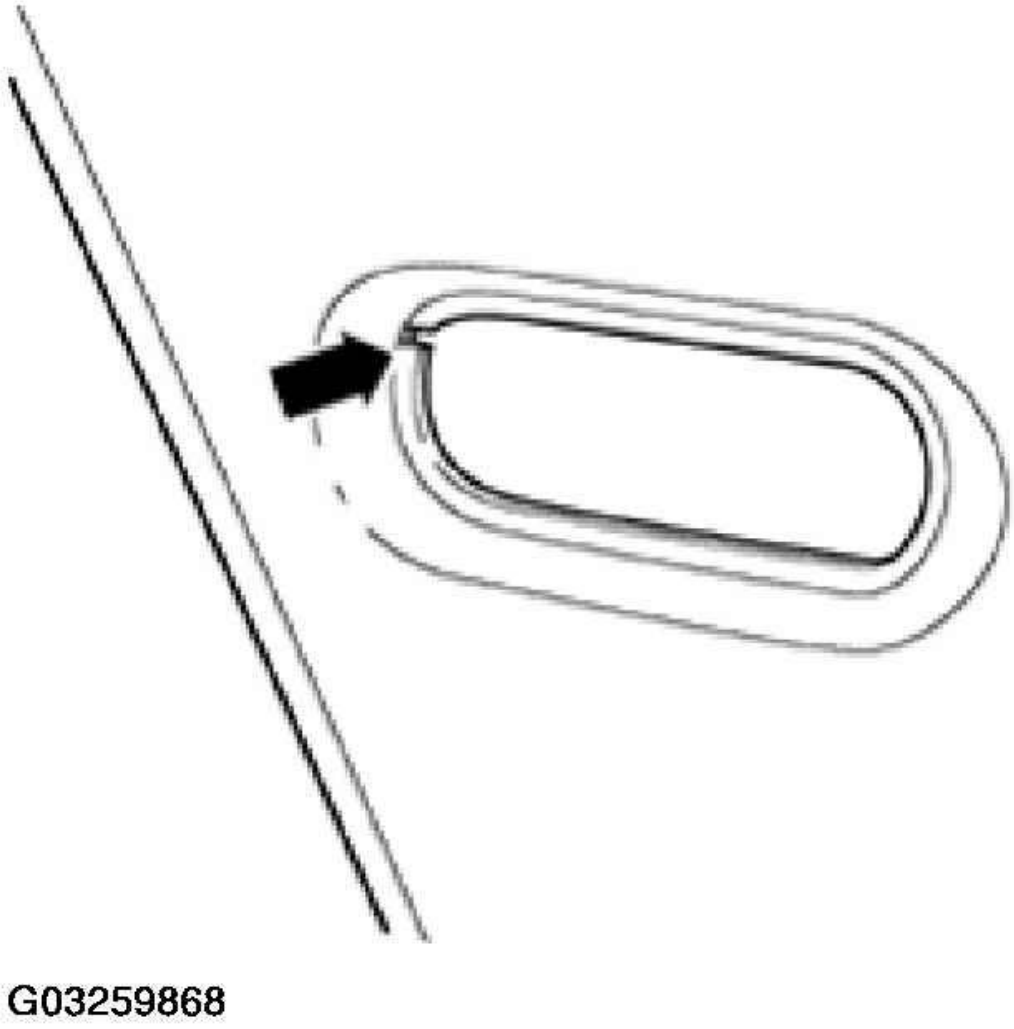



**Fig. 82: Inserting Rear Side Marker Light Into Bumper**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**REAR SIDE MARKER LIGHT BULB, REPLACING**

- Switch off all electrical consumers.
- Switch ignition off and remove ignition key.

**Removing**

**CAUTION:**
- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

- Remove rear inner fender liner.

  See **REAR WHEEL HOUSINGS LINER, ASSEMBLY OVERVIEW** .

- Turn bulb holder in direction shown -arrow- and pull out from housing.

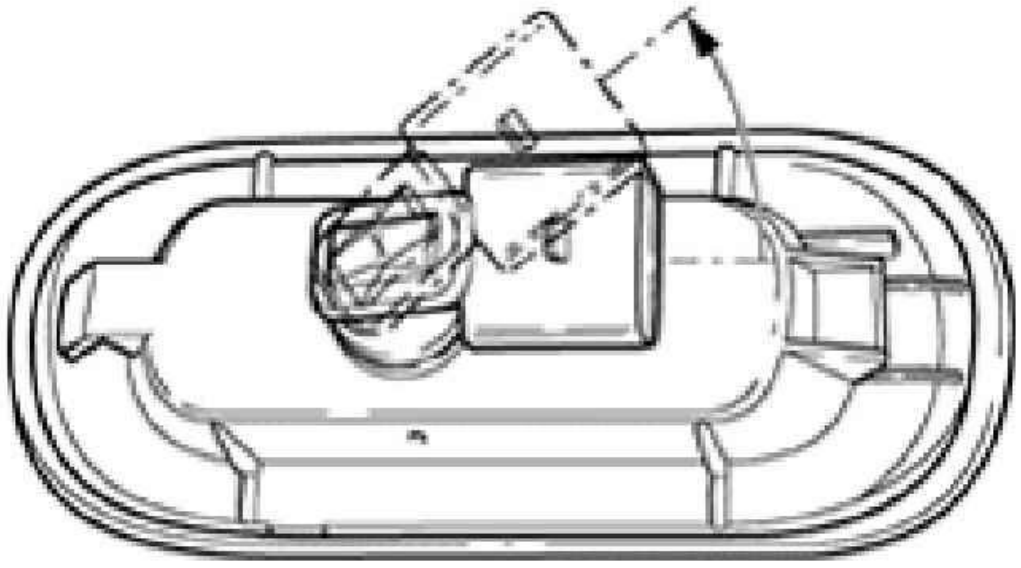



**Fig. 83: Removing Rear Side Marker Light Bulb From Holder**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Pull out bulb (12V/5W), do not turn.

**Installing**

**CAUTION: Do not touch the glass portion of the bulb with bare hands. The moisture and/or grease from fingers that evaporates on the bulb during operation can cause the glass to cloud over.**

- Install in reverse order of removal.

**NOTE: When installing, make sure bulb holder engages in housing by turning in opposite direction shown -arrow-. See Fig. 83 .**

**BACK-UP LIGHTS, REMOVING AND INSTALLING**

**CAUTION:**
- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Remove retaining nuts M5 from inner side of rear bumper (arrows).

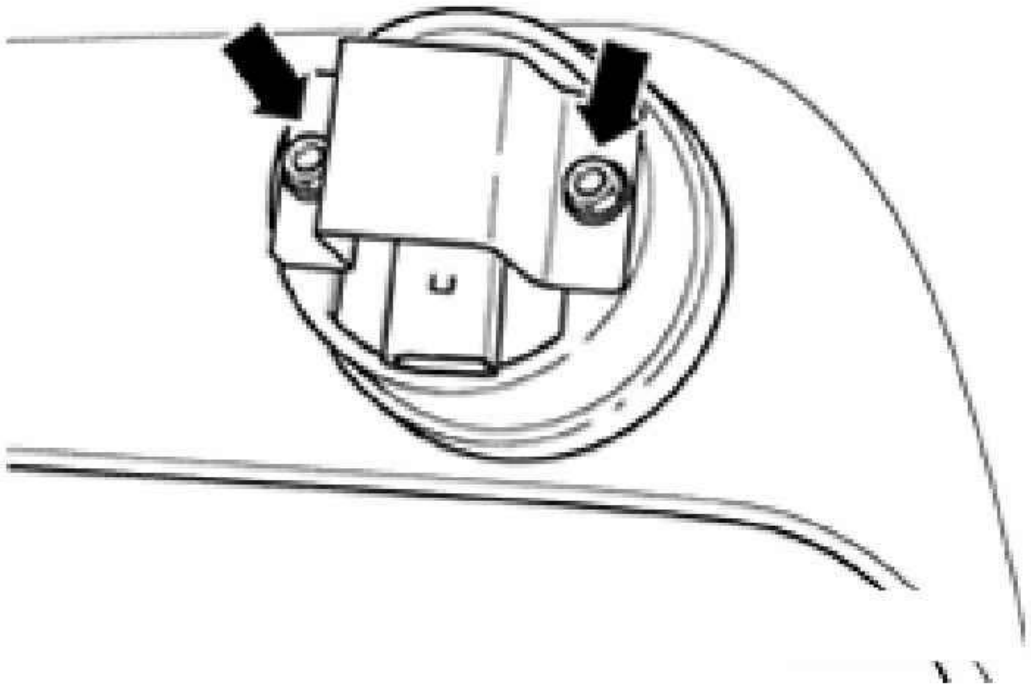



**Fig. 84: Removing Back-Up Light Retaining Nuts M5 From Inner Side Of Rear Bumper**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove back-up lights toward rear.

- Disconnect electrical connector from back-up lights.

**Installing**

- Connect electrical connector.
- Install back-up lights into rear bumper and secure with retaining nuts.

## BACK-UP LIGHT BULB, REPLACING

**Removing**

- Remove back-up light. See **BACK-UP LIGHTS, REMOVING AND INSTALLING** .
- Turn bulb holder in direction shown -arrow- and pull out from housing.
- Remove bulb from holder.

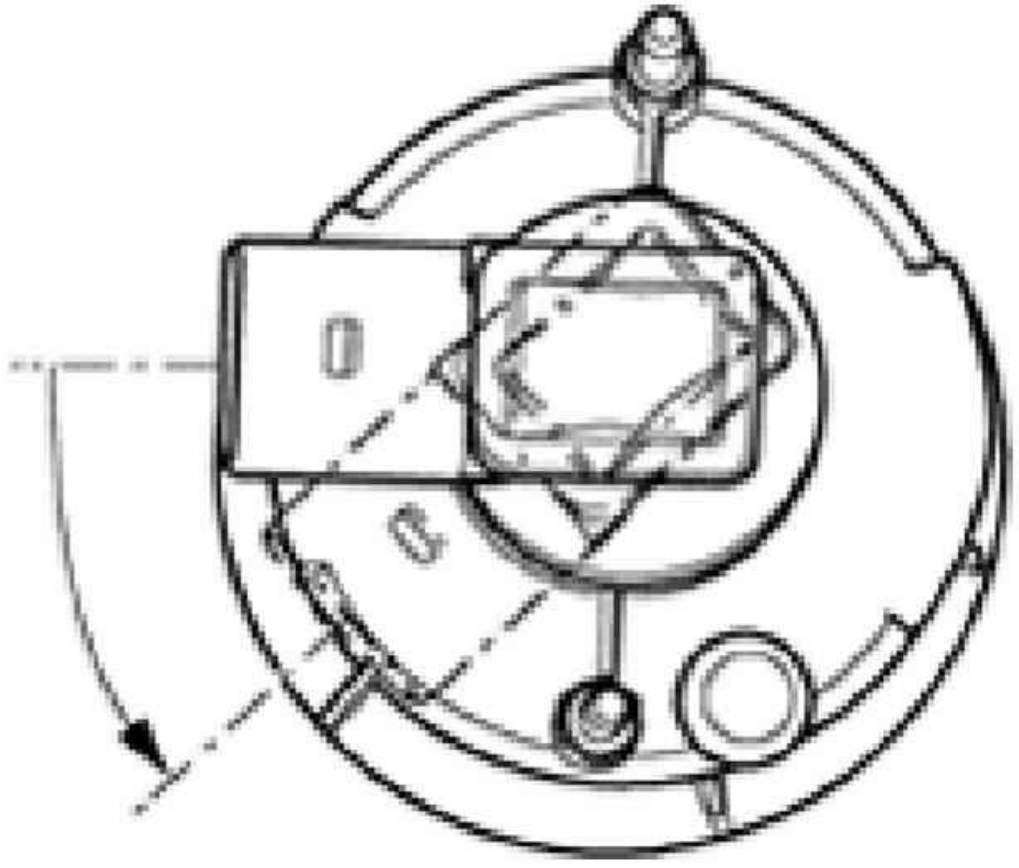



**Fig. 85: Removing Back-Up Light Bulb From Holder**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Installing**

**CAUTION: Do not touch the glass portion of the bulb with bare hands. The moisture and/or grease from fingers that evaporates on the bulb during operation can cause the glass to cloud over.**

- Install in reverse order of removal.

**NOTE: When installing, make sure bulb holder engages in housing by turning in opposite direction shown -arrow-. See Fig. 85 .**

# HIGH MOUNT BRAKE LIGHT

## HIGH MOUNT BRAKE LIGHT, REMOVING AND INSTALLING

The additional brake light is installed in the rear trunk lid.

**CAUTION:**

- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Remove rear lid lower trim.

  See **LOWER TRIM PANEL, ASSEMBLY OVERVIEW** .

- Remove Phillips-head screws (arrows) for high mount brake light.

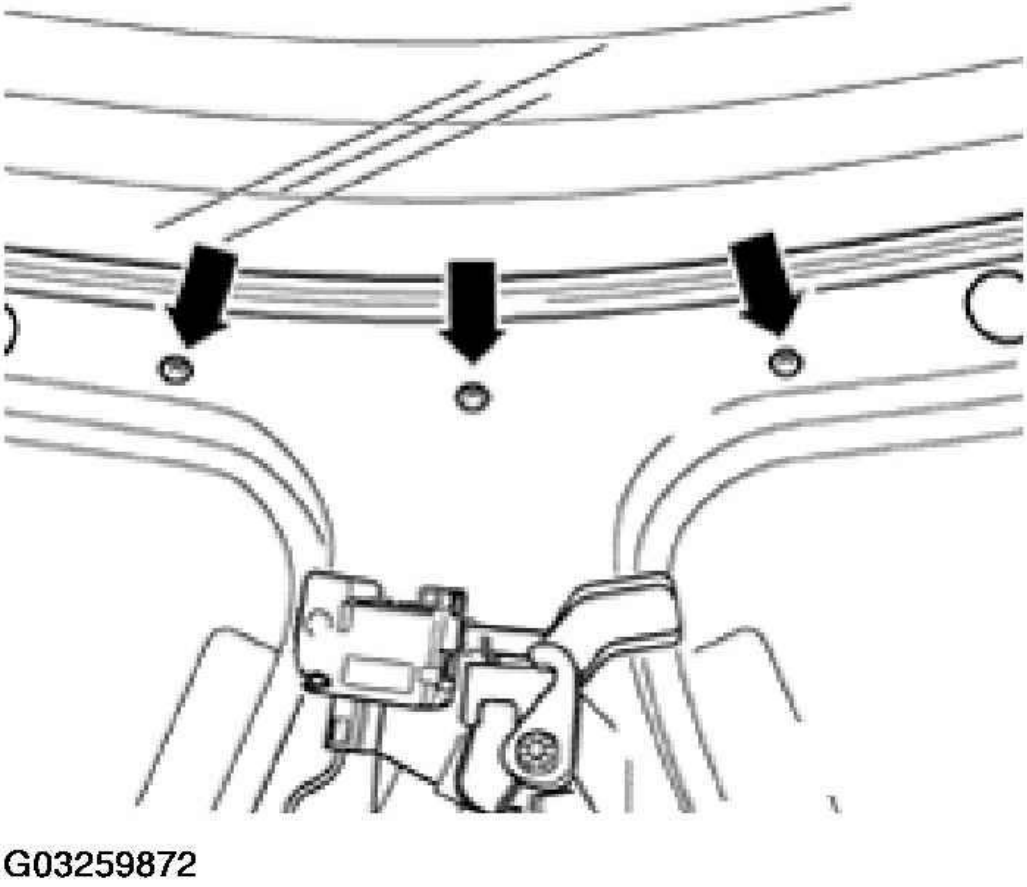



**Fig. 86: Removing Phillips-Head Screws For High Mount Brake Light**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove brake light upward and disconnect electrical connector.

**Installing**

- Connect electrical connector.
- Insert brake light in bumper.

To attach screws:

- Reach behind panel and position high mount brake light correctly.
- Tighten screws.

# LICENSE PLATE LIGHT

## LICENSE PLATE LIGHT, REMOVING AND INSTALLING

**CAUTION:**

- **Switch off all electrical consumers.**
- **Switch ignition off and remove ignition key.**

**Removing**

- Carefully pry out license plate light -2- with suitable tool until retaining tab -1- releases.
- Remove license plate light -2-.

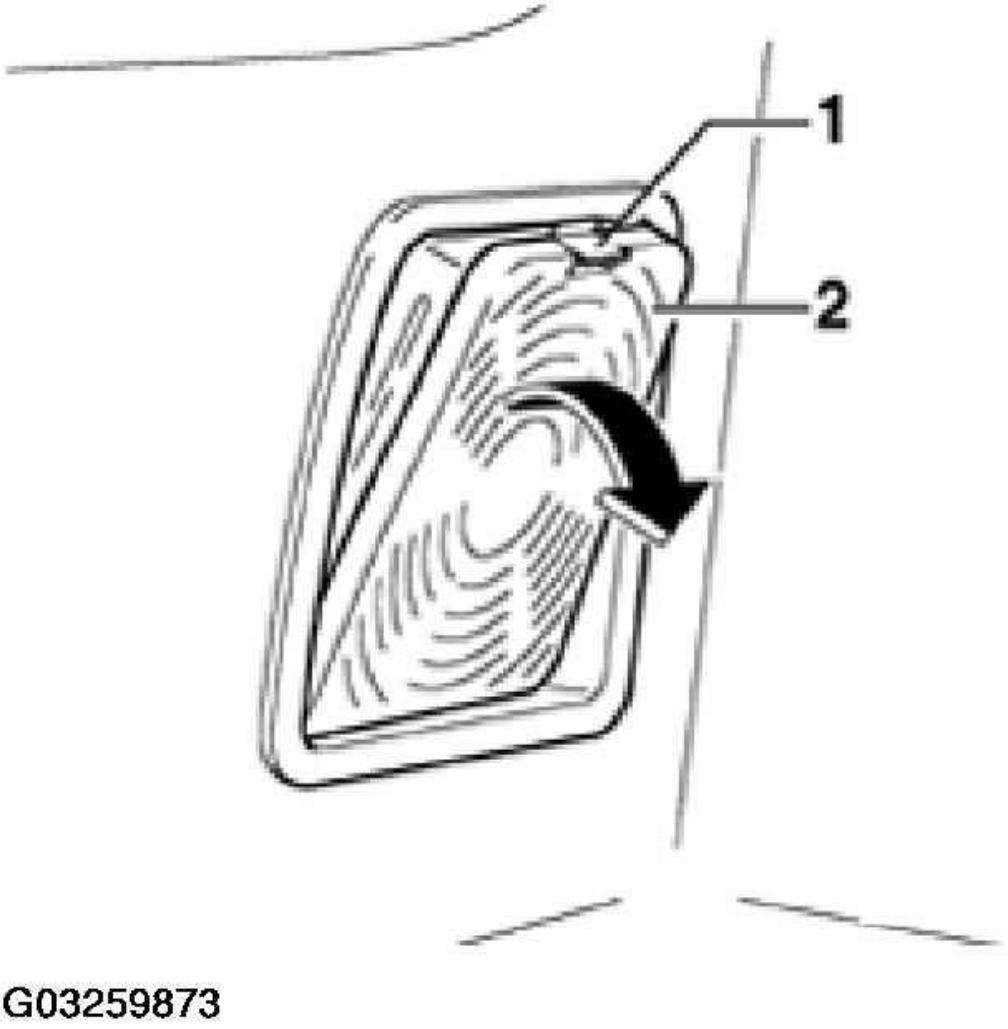



**Fig. 87: Removing License Plate Light**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Disconnect electrical connector.

**Installing**

- Connect electrical connector.
- Insert license plate light in bumper.
- Press in upper retaining tab -1- and lock in position.

## LICENSE PLATE LIGHT BULB, REPLACING

**Removing**

- Remove license plate light. See **LICENSE PLATE LIGHT** .
- Turn bulb holder in direction shown -arrow- and remove from housing.

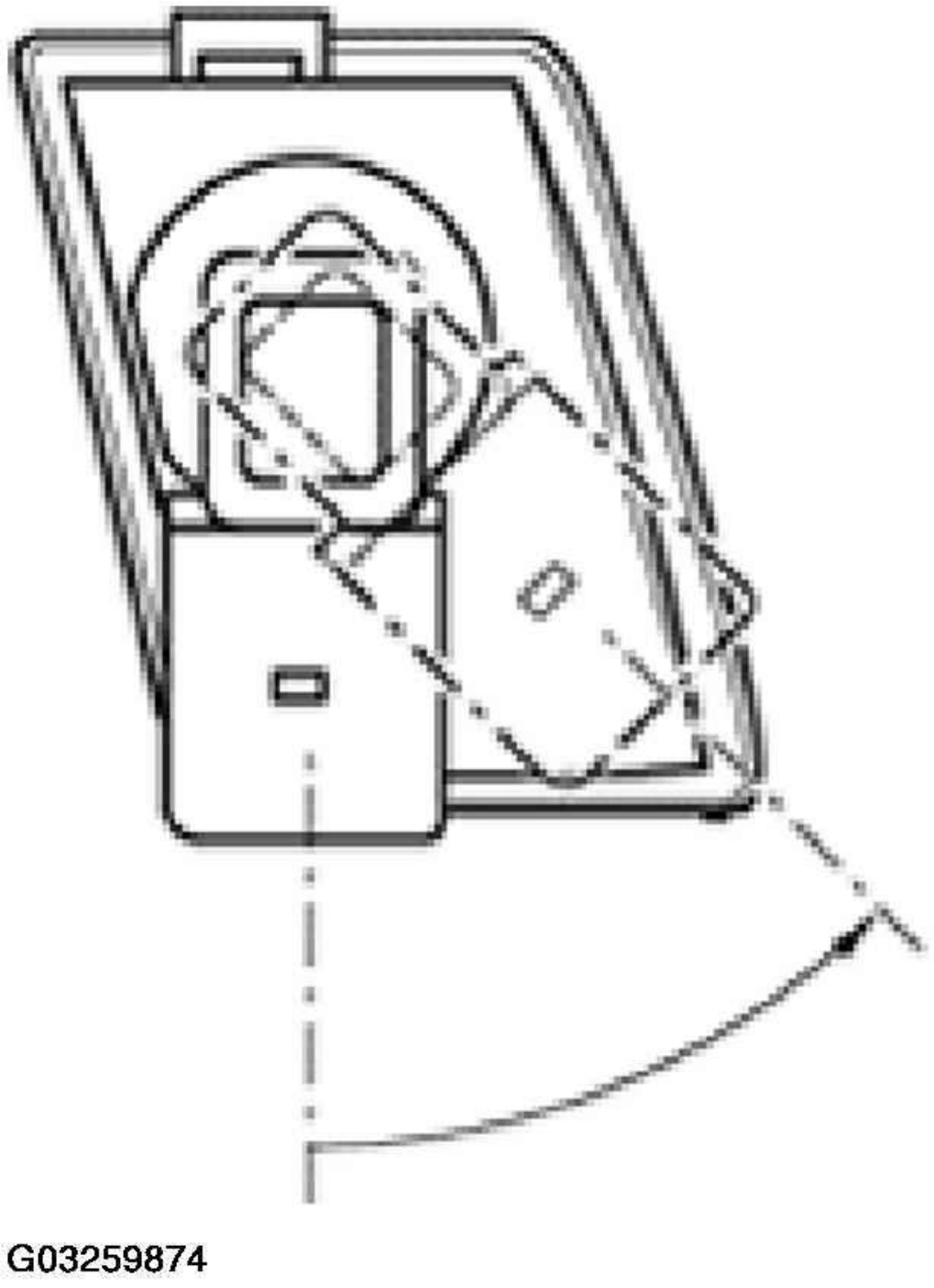



**Fig. 88: Removing License Plate Light Bulb From Holder**

**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Pull out bulb (12V/5W), do not turn.

**Installing**

**CAUTION: Do not touch the glass portion of the bulb with bare hands. The moisture and/or grease from fingers that evaporates on the bulb during operation, can cause the glass to cloud over.**

- Install in reverse order of removal.
- When installing, make sure bulb holder engages in housing by turning in opposite direction shown -arrow-. See **Fig. 88** .

## STEERING COLUMN SWITCHES

### STEERING COLUMN SWITCHES, REMOVING AND INSTALLING

**CAUTION: Before beginning repairs on the electrical system:**

- **Obtain the anti-theft radio security code.**
- **Switch off all electrical consumers.**
- **Switch off ignition and remove ignition key.**
- **Disconnect negative ( - ) battery terminal.**
- **When disconnecting and reconnecting battery terminals, observe all applicable Notes and torque specifications, as well as instructions on performing OBD program and electrical system function checks as specified. See BATTERY, DISCONNECTING AND RECONNECTING .**

**WARNING: Airbags and related equipment (e.g. steering wheel) must only be disassembled, assembled and repaired by trained VW Service Department personnel.**

- **Before working on any airbag, steering wheel or steering column components, first always disconnect the battery.**
- **Make sure that no person is in the vehicle when connecting the negative ( - ) battery terminal.**

**Special tools and equipment**

VAG1332 torque wrench (40 - 200 N.m)

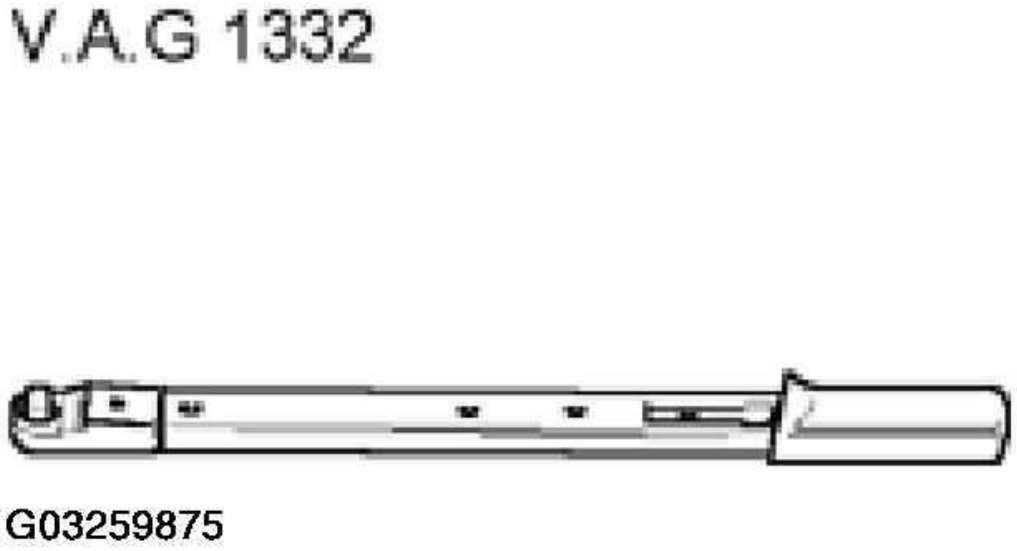



**Fig. 89: Identifying VAG 1332 Torque Wrench (40 - 200 N.M)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Removing**

- Disconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Remove driver-side airbag unit.

  See appropriate airbag article in RESTRAINTS.

- Remove steering wheel bolt -1-.

  Tightening torque: 50 +/- 5 N.m (37 +/- 3.7 ft. lb)

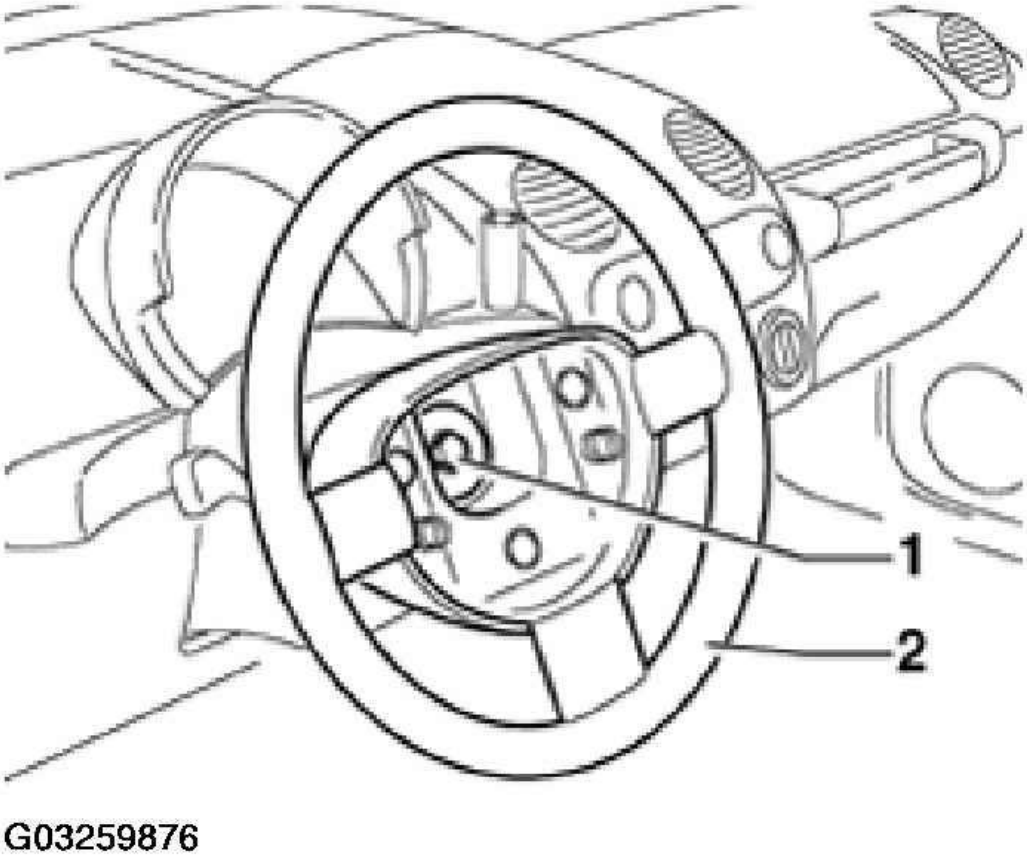



**Fig. 90: Removing Steering Wheel Bolt**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Make one center punch mark on multi-point socket-head bolt -1-.

**NOTE: Multi-point socket-head bolts that already have five center punch marks must be replaced.**

- Position steering wheel -2- in center position (wheels straight ahead).
- Remove steering wheel -2- off steering column.
- Remove two Phillips-head screws (arrows).

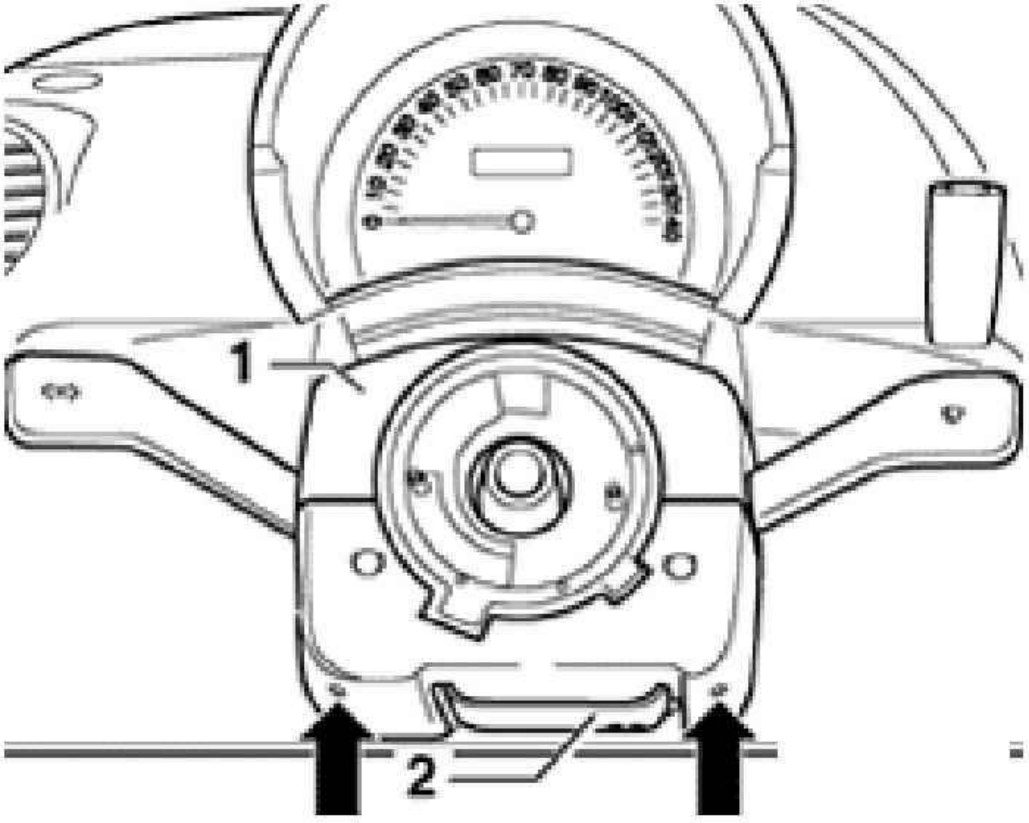



**Fig. 91: Removing Two Phillips-Head Screws & Steering Column Switch Trim**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove upper steering column switch trim -1-.
- Remove four Phillips-head screws (arrows).

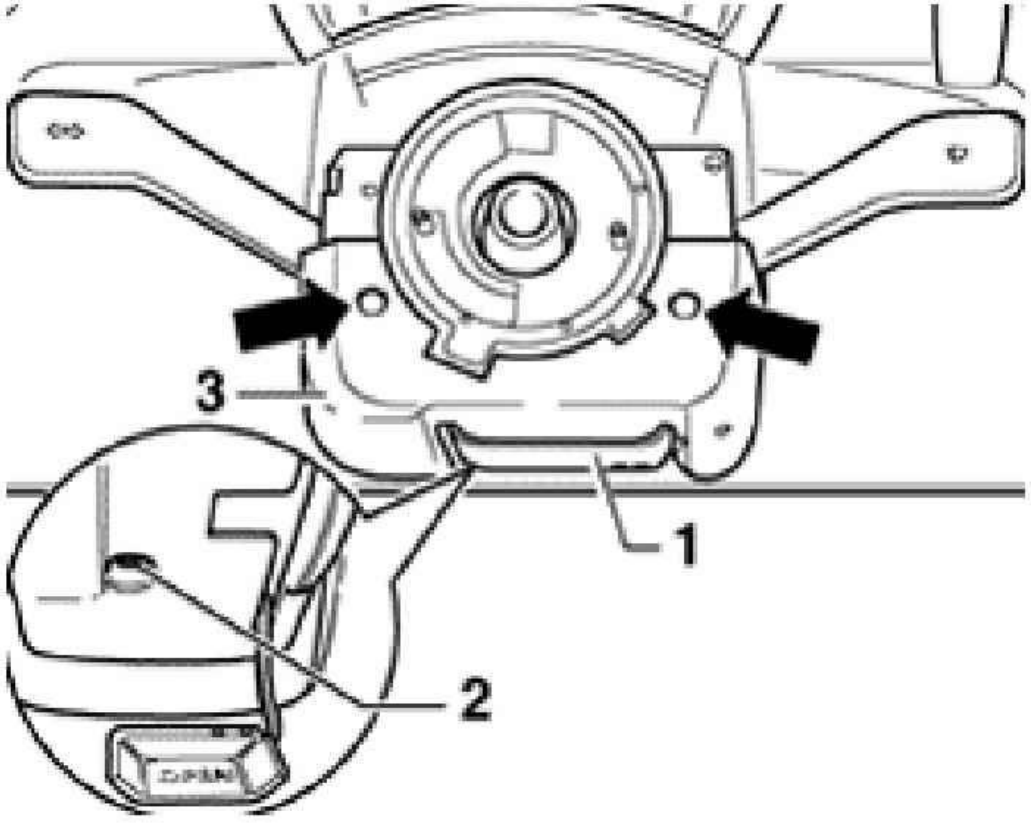



**Fig. 92: Removing Four Phillips-Head Screws - Lower Steering Column Switch Trim**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove socket head hex bolts -1-.
- Release steering wheel height adjustment -2-.
- Remove lower steering column switch trim -3-.
- Remove socket head bolt -1-.

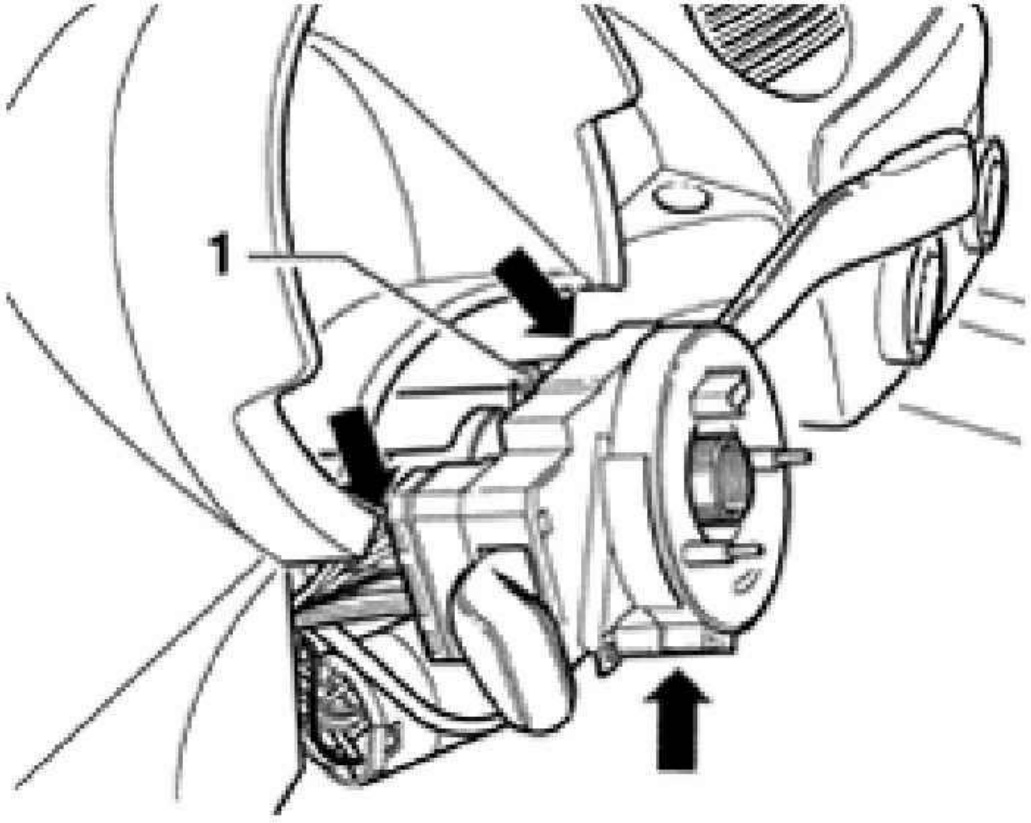



**Fig. 93: Removing Socket Head Bolt From Steering Column Switches**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Disconnect electrical connectors (arrows) from steering column switches.
- Remove steering column switches.

**Installing**

- Install in reverse order of removal.

## STEERING COLUMN SWITCHES, CONNECTOR ASSIGNMENTS

**Switches for windshield wiper and washer system**

**A - 6-pin connector**

1 - 4 - Open

5 - Windshield wiper intermittent regulator to automatic intermittent washer/wiper relay

6 - Windshield wiper intermittent regulator -terminal 31

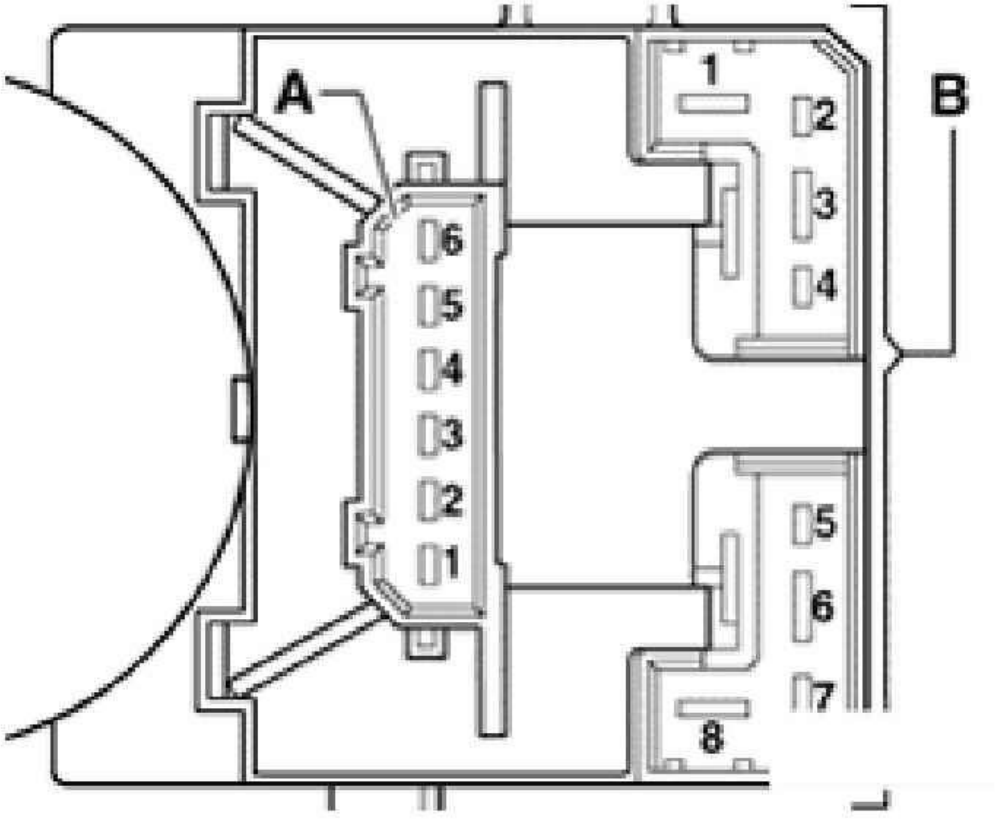



**Fig. 94: Identifying Steering Column Switch Connector A (6-Pin) & Connector B (8-Pin)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**B - 8-pin connector**

**NOTE: The following list refers to items in Fig. 94 .**

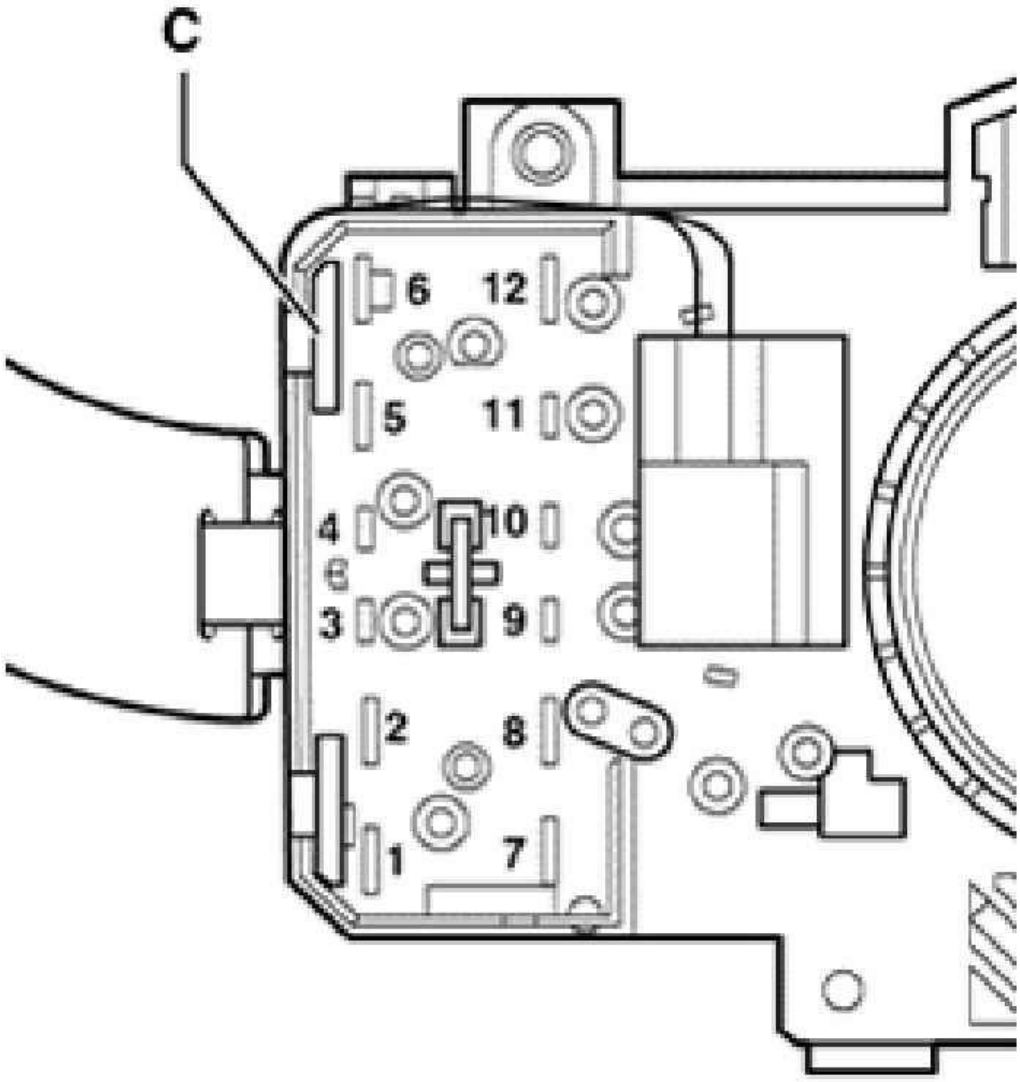
1. Windshield wiper switch - terminal 53
2. Windshield wiper switch - terminal 31
3. Windshield wiper switch - terminal 53e
4. Windshield wiper switch - terminal 53c
5. Windshield wiper switch - rear window wiper
6. Windshield wiper switch - terminal 53b
7. Windshield wiper switch - intermittent operation
8. Windshield wiper switch - terminal 53a

**Switches for turn signals, high and low beam, headlight dimmer/flasher switch and parking light**

**C - 12 pin connector**

**NOTE: The following list refers to items in Fig. 95 .**

1. Headlight dimmer/flasher switch - terminal 30 (B+)
2. Headlight dimmer/flasher switch - terminal 30 (B+)
3. Turn signal switch - terminal L
4. Parking light switch - terminal P
5. Turn signal switch - terminal 49a
6. Horn plate - terminal 71
7. Headlight dimmer/flasher switch - terminal 56
8. Headlight dimmer/flasher switch - terminal 56b
9. Parking light switch - terminal PL
10. Parking light switch - terminal PR
11. Turn signal switch - terminal R
12. Headlight dimmer/flasher switch - terminal 56a




C - 12 pin connector

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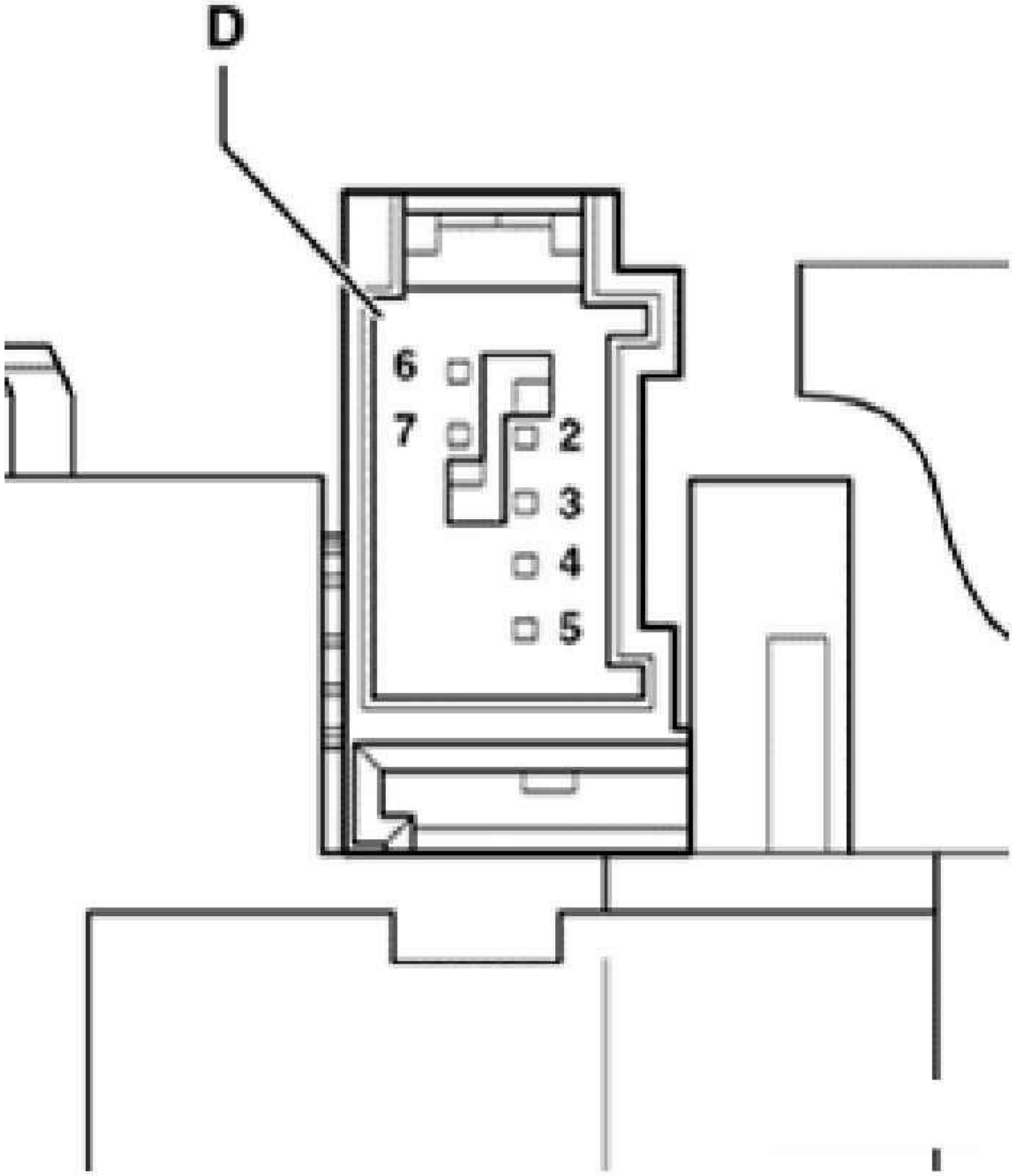
**Fig. 95: Identifying Connector C (12-Pin) Pins**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

**Switch for cruise control system**

**D - 10-pin connector**

**NOTE: The following list refers to items in Fig. 96 .**

1. Open
2. Switch for CCS - On/Off
3. Switch for CCS - Set / accelerate
4. Switch for CCS - Reset / Resume
5. Switch for CCS - Reset / Resume
6. Switch for CCS - On/Off
7. Switch for CCS
8. Open
9. Open
10. Open




D - 10-pin connector

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**Fig. 96: Identifying Cruise Control System Connector D (10-Pin)**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

# IGNITION/STARTER SWITCH AND LOCK CYLINDER

## LOCK CYLINDER, REMOVING AND INSTALLING

**CAUTION: Before beginning repairs on the electrical system:**

- **Obtain the anti-theft radio security code.**
- **Switch off all electrical consumers.**
- **Switch off ignition and remove ignition key.**
- **Disconnect negative ( - ) battery terminal.**
- **When disconnecting and reconnecting battery terminals, observe all applicable Notes and torque specifications, as well as instructions on performing OBD program and electrical system function checks as specified. See BATTERY, DISCONNECTING AND RECONNECTING .**

**Special tools and equipment**

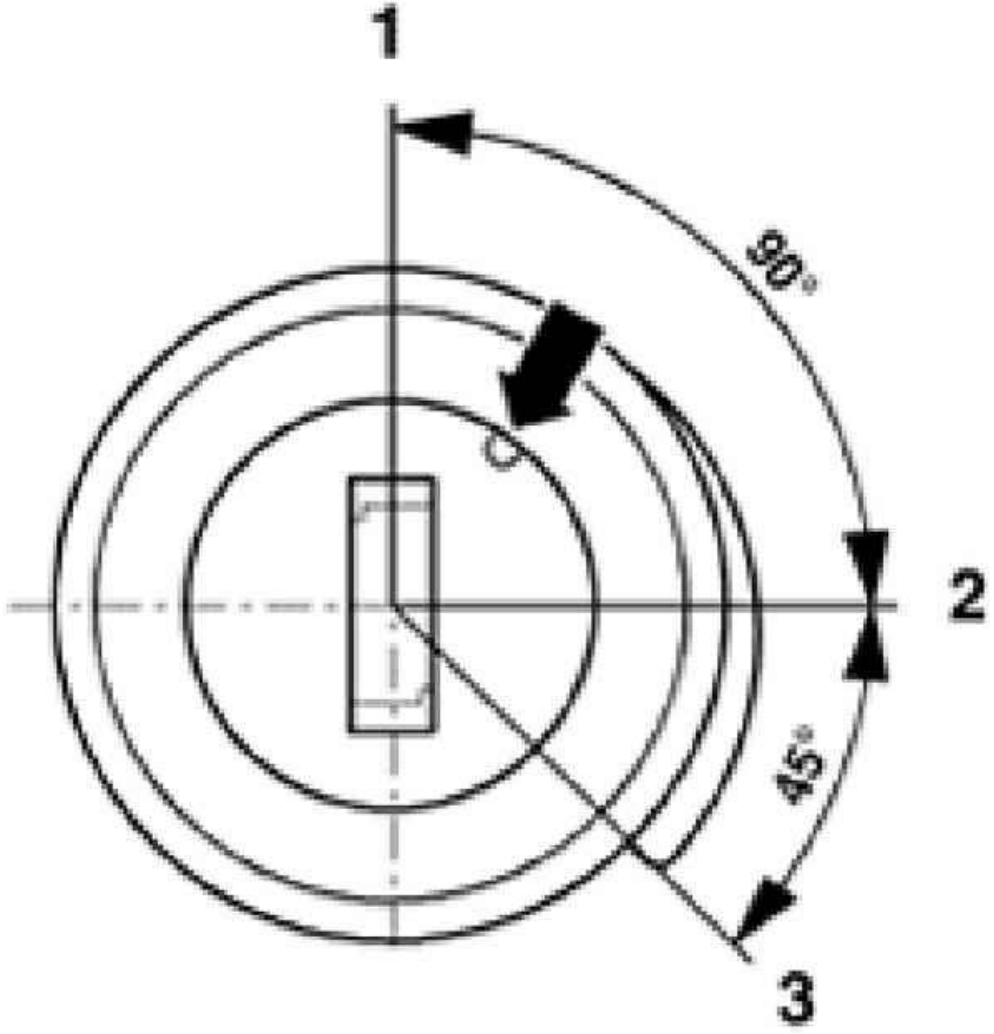
Steel wire, 1.2 mm (0.047 in.) thick

**Removing**

- Disconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Remove upper and lower steering column switch trim. See **STEERING COLUMN SWITCHES** .
- Insert ignition key in lock cylinder.
- Turn to "Drive" position.

Position of key in lock cylinder:

1. Position "Stop"




1 - Position "Stop"

2 - Position "Drive"

3 - Position "Start"

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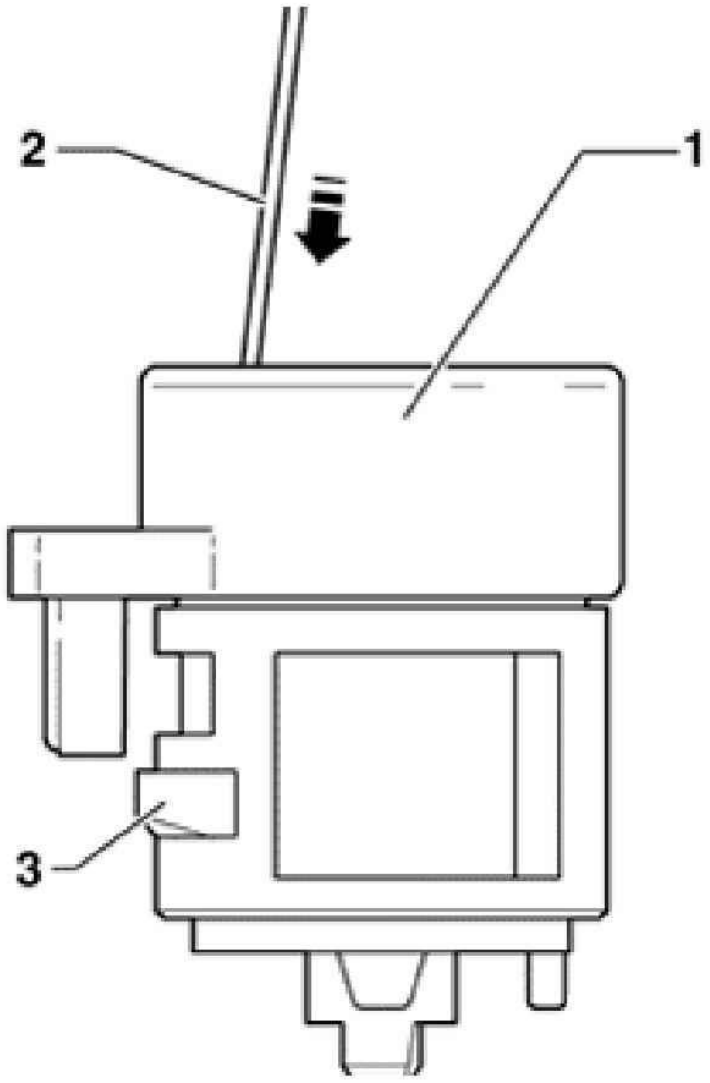
**Fig. 97: Identifying Position Of Key In Lock Cylinder**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

2. Position "Drive"
3. Position "Start"

- Insert wire (approx. 1.2 mm diameter) in drilling next to ignition key -arrow-. See **Fig. 98** .
- Release lock cylinder securing lever using wire -2- and remove lock cylinder from steering lock housing.




1 - Lock cylinder

2 - Wire (approx. 1.2 mm diameter)

3 - Securing lever

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**Fig. 98: Removing Lock Cylinder**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

1. Lock cylinder

2. Wire (approx. 1.2 mm diameter)
3. Securing lever

**Installing**

- Insert ignition key into lock cylinder.
- Turn to "Drive" position.
- Release securing lever using wire (approx. 1.2 mm diameter) and insert lock cylinder in steering lock housing.
- Remove wire out from lock cylinder and check that lock cylinder is seated properly in steering lock housing.
- Install steering column switches and steering wheel trim. See **STEERING COLUMN SWITCHES** .

## IGNITION/STARTER SWITCH, REMOVING AND INSTALLING

**CAUTION: Before beginning repairs on the electrical system:**

- **Obtain the anti-theft radio security code.**
- **Switch off all electrical consumers.**
- **Switch off ignition and remove ignition key.**
- **Disconnect negative ( - ) battery terminal.**
- **When disconnecting and reconnecting battery terminals, observe all applicable Notes and torque specifications, as well as instructions on performing OBD program and electrical system function checks as specified. See BATTERY, DISCONNECTING AND RECONNECTING .**

**Special tools and equipment**

Sealant "D2"

**Removing**

- Disconnect battery. See **BATTERY, DISCONNECTING AND RECONNECTING** .
- Remove upper and lower steering column switch trim. See **REMOVING** .
- Disconnect multi-pin connector from ignition/starter switch.

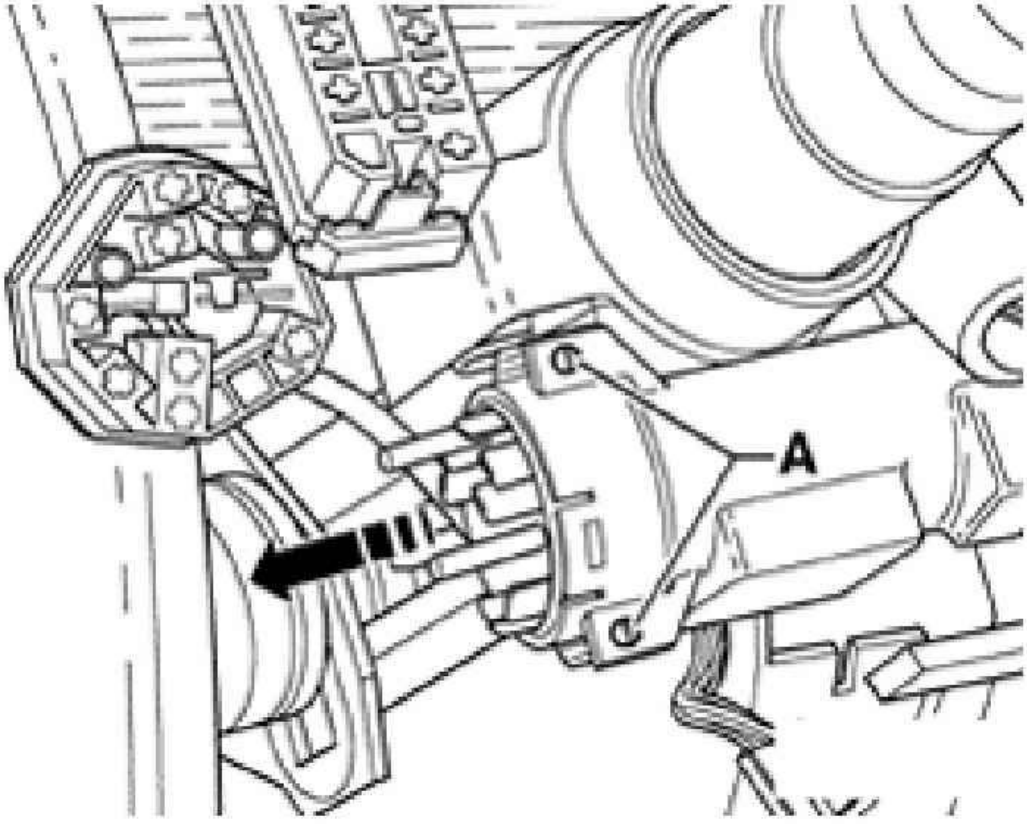



**Fig. 99: Locating Ignition/Starter Switch Screws**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**

- Remove locking fluid (paint) from threaded holes of screws -A-.
- Loosen two screws -A- slightly and pull ignition/starter switch out from steering lock housing in direction shown -arrow-.

**Installing**

- Push ignition/starter switch into steering lock housing.

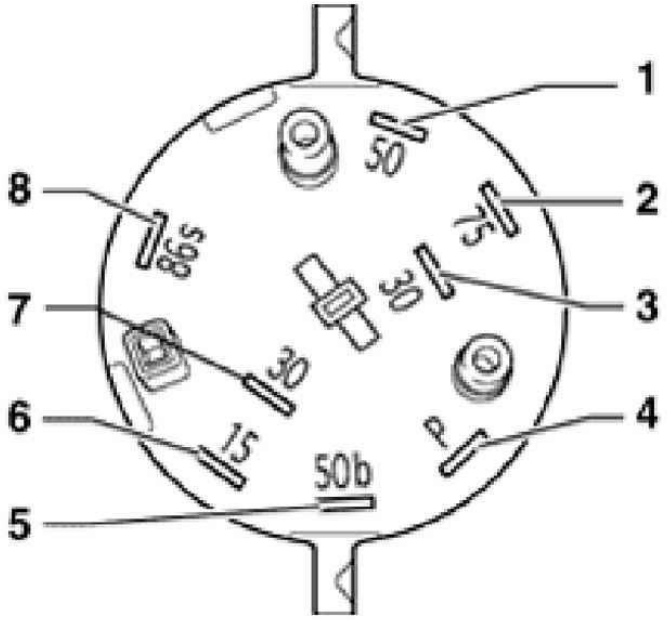
**NOTE: When installing the ignition/starter lock switch ensure that the ignition/starter lock switch and the lock cylinder are in the same position, e.g. "ignition on".**

- Tighten screws and seal securing holes with sealant D2.
- Connect multi-pin connector to ignition/starter switch.
- Install steering column switches and steering wheel trim.

## IGNITION/STARTER SWITCH, CONNECTOR ASSIGNMENTS

**Connector, 8 pin**

1. Terminal 50
2. Terminal 75
3. Terminal 30
4. Terminal P
5. Terminal 50b
6. Terminal 15
7. Terminal 30
8. Terminal 86s




1 - Terminal 50

2 - Terminal 75

3 - Terminal 30

4 - Terminal P

5 - Terminal 50b

6 - Terminal 15

7 - Terminal 30

8 - Terminal 86s

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**Fig. 100: Identifying Ignition/Starter Switch Connector (8-Pin) Terminals**
**Courtesy of VOLKSWAGEN OF AMERICA, INC.**